STAFF REPORT 9-11-2019 MEETING **PREPARED BY**: J. ROSS
APPLICATION NUMBER 19-6430
ADDRESS: 2857 E. GRAND BLVD
HISTORIC DISTRICT: JAM HANDY
APPLICANT: JORDAN KELLER
DATE OF COMPLETE APPLICATION: 8-29-2019
DATE OF STAFF SITE VISIT: 9-9-2019

SCOPE: REHABILITATE BUILDING

EXISTING CONDITIONS
The building is one-story in height and features a rectangular plan. Exterior walls are primarily brick with cast concrete detailing at the cornice. All original door and window openings have been infilled with concrete block. A metal rollup door is located at the side/east elevation. A hinged metal door is located at the rear. Much of the masonry at the building's exterior walls has been painted. The dentilated cast concrete cornice has not been painted.





2857 E. Grand Boulevard, current conditions

PROPOSAL
As per the submitted proposal the applicant is seeking this body's approval to rehabilitate the building, to include the following work items:

Rear Elevation
- Replace the existing single, metal door with a new steel door (color not specified)
- Install new aluminum gutter and downspout (color not specified)
- Install new wall-mounted light fixtures (colors black and white)
- Clean masonry/remove paint from exterior
- Paint wall Yellowish White
- Pant sign on the wall which reads "Milwaukee Junction (color grey)

East Elevation
- Replace the existing single metal overhead door with a new steel overhead door (color not specified)
- Install new wall-mounted light fixtures (colors black and white)
- Clean masonry/remove paint from exterior
- Paint wall Yellowish White, to include currently unpainted cast stone cornice

Front Elevation
- Install new wall-mounted light fixtures (colors black and white)
- Clean masonry/remove paint from exterior
- Paint wall Yellowish White, to include currently unpainted cast stone cornice
- Remove concrete block infill from openings and install new aluminum storefront windows and entry doors

Rooftop
- Remove and replace existing HVAC units with new HVAC units
- Replace existing membrane with new rubberized membrane
- Install new green roof tray system

Landscaping
- At alley to rear of building, repair and resurface with asphalt and reclaimed brick
- At alley, to the rear of the building, remove the existing chain-link gate
- At the front and rear, install in-ground up lights

STAFF OBSERVATIONS AND RESEARCH
- The building located at 2857 E. Grand Blvd. is a one-story, masonry building which was erected in 1923. The building was designed by M.R. Burrowes, architect for Newbro Gallogly. The building was originally constructed as a garage and used-car salesroom for the adjacent Maurice Fox Ford dealership.
- Jam Handy was designated a local historic district in 2014

ISSUES
- The applicant proposes to paint unpainted cast stone at the building's front and side elevation parapet/cornice

- See https://www.nps.gov/tps/standards/rehabilitation/rehab/masonry01.htm, in which the National Park Service does not recommend "applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated…"
- The Standards require that the *"…surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible."*
- As noted above, the building's exterior walls are painted with the exception of the dentilated cast concrete cornice at the front and side elevations. Repainting the painted portions of the walls require that the walls first be cleaned and the existing paint be removed. The applicant has outlined the cleaning methods they shall employ to prepare the walls for repainting. Staff is unclear if the proposed cleaning method is "the gentlest means possible." Staff will therefore undertake additional research and discussions with the applicant to confirm. The findings will be presented to the Commission at the 9-11-2019 meeting.

RECOMMENDATION

Staff recommends that the Commission issue a Certificate of Appropriateness for all of the proposed work items, ***with the exception of the proposed painting and cleaning***, because they meet the Secretary of the Interior Standards for Rehabilitation, standards # 6) *Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence* and 10) *New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

Regarding the proposed painting of the unpainted parapet/cornice at the building, staff recommends that the Commission *deny* the issuance of a Certificate of Appropriateness for this work item because it does not meet the Secretary of the Interior Standards for Rehabilitation, standard # 9) *New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.* However, staff does recommend that the Commission issue this COA with the condition that staff be afforded the authority to review and approve minor revisions to the approved design. Should staff determine that any such revision does not meet the Standards, staff shall forward the project to the Commission for review at a meeting.

Finally, as noted above, staff is currently researching the proposed methods for cleaning, paint removal, and repainting of the exterior walls to ensure that they will not damage the masonry. The results of this research will be presented to the Commission at the 9-11-2019 meeting. Staff therefore demurs from proferring a recommendation re: this scope item at this time.



MILWAUKEE JUNCTION

EAST GRAND + OAKLAND

BOYER CAMPBELL

HDC SEPTEMBER 2019

OOMBRA ARCHITECTS

3 BUILDINGS TO BE RENOVATED + RESURFACED PARKING LOT

MJ E GRAND & OAKLAND | OVERVIEW



3 BUILDINGS TO BE RENOVATED + RESURFACED PARKING LOT



MJ E GRAND & OAKLAND | OVERVIEW

2857 E Grand - 1 Story CMU & brick building at the corner of E Grand & Oakland - to be renovated into commercial retail space

- New storefront in the original existing openings to replace current blocked up CMU walls along E Grand Blvd
- New membrane roof to replace existing dilapidated roof
- Existing masonry shell to be cleaned, repaired, tuck-pointed and painted
- Commercial / Retail tenant TBD.

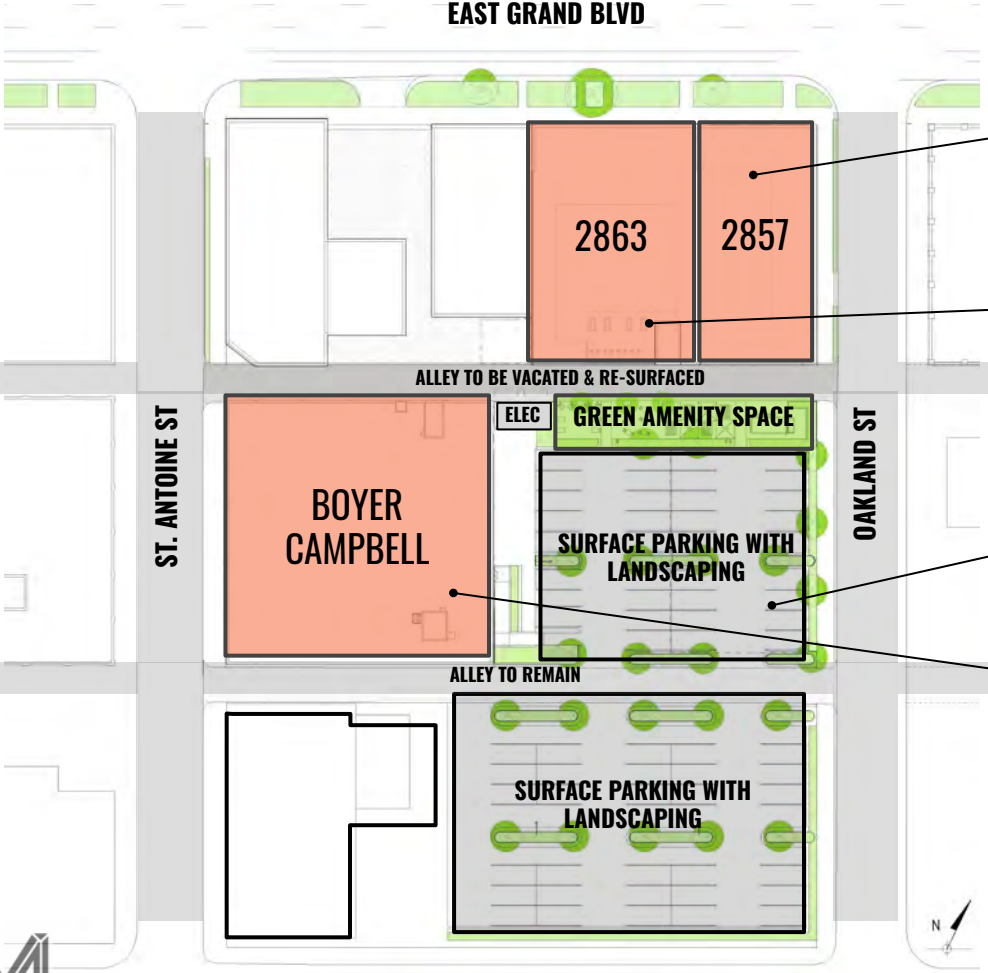
2863 E Grand - 3 Story brick & concrete building on E Grand Blvd - to be renovated into commercial retail and residential lofts

- Storefront in the original existing openings to replace the current blocked up CMU and stucco panels along E Grand Blvd
- New membrane roof to replace existing dilapidated roof
- Existing masonry shell to be cleaned, repaired, tuck-pointed and painted
- All windows to be replaced with similar character and style as original along E Grand.
- Some additional new window openings to be located on the sides of the building - where indicated on the drawings
- First floor Commercial / Retail tenants TBD
- Second and third floor to be (18) apartments in total with one small shared roof deck.

6540 St Antoine St "Boyer Campbell Building" - to be renovated as commercial office space

- New storm windows to be installed on the interior side of the existing windows to allow for the existing divided lite frames to remain
- New storefront to replace existing glass block on front facade
- Existing masonry shell to be cleaned, repaired and tuck-pointed
- Commercial tenant(s) to be determined.

MJ E GRAND & OAKLAND | SITE PLAN



2857 E GRAND
1-STORY FOR COMMERCIAL USE:
CLEAN, REPAIR FACADE, NEW STOREFRONT,
REPLACE COILING DOOR, NEW ROOF, PAINT BRICK

2863 E GRAND
3-STORY, GROUND FLOOR COMMERCIAL, UPPER LEVELS RESIDENTIAL:
CLEAN, REPAIR FACADE, REPLACE WINDOWS, SIMILAR CHARACTER, NEW ROOF, PAINT BRICK

RESURFACED PARKING
75 SPACES PROPOSED WITH LANDSCAPE ISLANDS, PLANTINGS AS SHOWN ON LANDSCAPE PLAN

6540 ST. ANTOINE
4-STORY FOR COMMERCIAL USE:
CLEAN, REPAIR FACADE, REPAIR EXISTING WINDOWS, REPLACE WINDOWS IN SIMILAR CHARACTER WHERE REQUIRED
REPLACE GLASS BLOCK ON FRONT FACADE WITH NEW STOREFRONT

OOMBRA ARCHITECTS

LANDSCAPING

TALL GRASSES (MAIDEN GRASS, PURPLE FOUNTAIN GRASS) AND TREES (KENTUCKY COFFEE TREE) IN LANDSCAPE BUFFER AROUND PARKING

LOW GRASSES (BLUE FESCUE) AND TREES (OAK AND MAPLE) IN PARKING LOT ISLANDS AND OUTDOOR AMENITY SPACE

**PLEASE REFER TO THE LANDSCAPE PLAN FOR SPECIFIC LOCATIONS*



KENTUCKY COFFEE TREE



SKINNY GENES OAK



SUNSET RED MAPLE



PURPLE FOUNTAIN GRASS



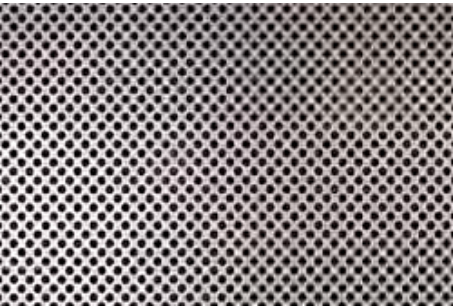
MAIDEN GRASS



BLUE FESCUE

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SITE
HARDSCAPE, MATERIALS & FENCING



PERFORATED STEEL EQUIPMENT SCREEN
(AT TRANSFORMERS)



CURB, GRAVEL, AND METAL EDGING
(PARKING LOT LANDSCAPE ISLANDS)



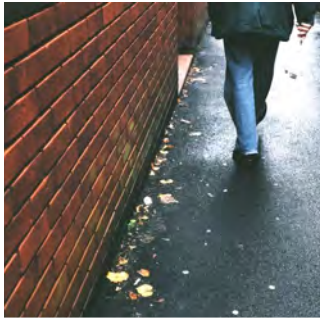
BLACK CHAIN LINK FENCE
(AT SECURED RESIDENTIAL PARKING)

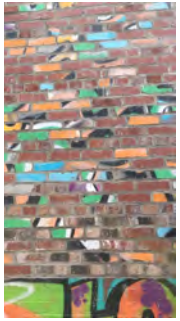


STEEL PLANTER BOXES
(THROUGHOUT ALLEY & AMENITY)

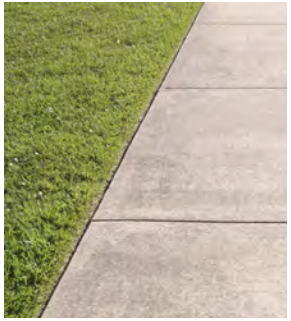


C.I.P. CONCRETE PLANTER
WITH STEEL LETTERING





ASPHALT + RECLAIMED BRICK
(ALLEY RESURFACING)





PEA GRAVEL WITH CONCRETE PATHS
(SITE AMENITY AREA)

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MJ E GRAND & OAKLAND | JAM HANDY HISTORIC DISTRICT

City of Detroit
CITY COUNCIL
HISTORIC DESIGNATION ADVISORY BOARD
218 Coleman A. Young Municipal Center, Detroit, Michigan 48226
Phone: (313) 224-4946 Fax: (313) 224-4336
e-mail: cc-historic@ci.detroit.mi.us



Final Report
Jam Handy/North End-East Grand Boulevard Historic District

By a resolution dated April 15, 2014, the Detroit City Council charged the Historic Designation Advisory Board (HDAB), a study committee, with the official study of the proposed Jam Handy/North End-East Grand Boulevard Historic District in accordance with Chapter 25 of the 1984 Detroit City Code and the Michigan Local Historic Districts Act.

The Jam Handy/North End-East Grand Boulevard Historic District is composed of 47 buildings (38 contributing, 9 non-contributing) located on E. Grand Blvd. between Woodward Avenue and Cameron Avenue in Detroit. The district also includes several buildings south of E. Grand Blvd and north of E. Milwaukee Avenue.

Address	Name	Architect/Builder	Date
21. 2785-95 E. Grand Blvd.	Vanguard Community Dev. Co.	C.O. Barton	1931
22. 2817 E. Grand Blvd.	Detroit Egg Biscuit & Specialty Co (Goodyear Tire)	Baxter & O'Dell	1906
23. 2821 E. Grand Blvd.	I.L. Scheinman & Co. (Jam Handy)	Pollmer & Robes	1917
24. 2831 E. Grand Blvd.	Jam Handy Studio		1935
25. 2841 E. Grand Blvd.	Chap (Jam Handy)	Wm. M. Pagel	
26. 2843 E. Grand Blvd.	Chap Lofts (Jam Handy Admin Offices)	F. Eugene Brotherton	1914
27. 2857 E. Grand Blvd.	Maurice Fox garage & used car salesroom	M.R. Burrowes	1923
28. 2863-65 E. Grand Blvd.	Maurice Fox Dealership	Colbertson & Kelley	1917
29. 2871 E. Grand Blvd.*			1951
30. 2881 E. Grand Blvd.*	Gas Station		

2857 E. Grand Blvd., Maurice Fox Garage & Used Car Showroom
This one-story building at the south-west corner of E. Grand Blvd and Oakland was designed by M.R. Burrowes, architect for Newbro-Gallogly, and a permit #9374 was pulled on May 15, 1923. The new building was constructed as a garage and used-car salesroom for Maurice Fox's bustling Ford dealership which was located next door at 2863-65 E. Grand Blvd.

The building is a one-story rectangular brick building with cast concrete and decorative brick detailing. The north elevation has storefront window openings that have been infilled with concrete block, and there is a rollup entry door on the east elevation. Below the cornice line of the roof is dentil molding.

OOMBRA ARCHITECTS

City of Detroit
CITY COUNCIL
HISTORIC DESIGNATION ADVISORY BOARD
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Address	Name	Architect/Builder	Date
44. 6540 St. Antoine	Boyer-Campbell Bld	Charles F.J. Barnes	1929
45. 603 E. Milwaukee Ave.	Warehouse		1925
46. 715 E. Milwaukee Ave.	Testing Lab		1930
47. 6543 Hastings	CED Inc. Detroit		1949

6540 St. Antoine, Boyer-Campbell Building (Jam Handy)
Charles F.J. Barnes was the architect of this concrete and brick four-story building designed to be an office and warehouse. Permit #63424 was pulled on August 6, 1929, for an estimated construction cost of $150,000.

From 1930 well into the 1950s, the building was occupied by Boyer-Campbell, a machinery and wholesale hardware dealer. Over the years, office space in the building was shared with a variety of local businesses, including Jam Handy Organization which was listed in the City Directory as occupying a portion of the building as early as 1935.

The four-story brick, steel and reinforced concrete building has a large stone entry portal that is vertically accentuated by courses of brick running to the roof line. The stone portal consists of two fluted columns with an entablature, which is underneath a stone cornice and dentil molding. The façade has many ornate elements such as patterned brick, stone accents underneath the windows and carved stone pieces near the roof line. The windows on the first floor are all glass block, while the windows on the second and third floor are typical factory windows with metal sashes. The window openings on the second floor have been boarded up with metal corrugated paneling. A sign on the main entry door attributes the building to the "Boyer Campbell Co."

MAURICE FOX DEALERSHIP

(2857 & 2863 E GRAND BLVD)

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2857 & 2863 E GRAND BLVD



2857 & 2863 E GRAND BLVD
NORTH ELEVATION



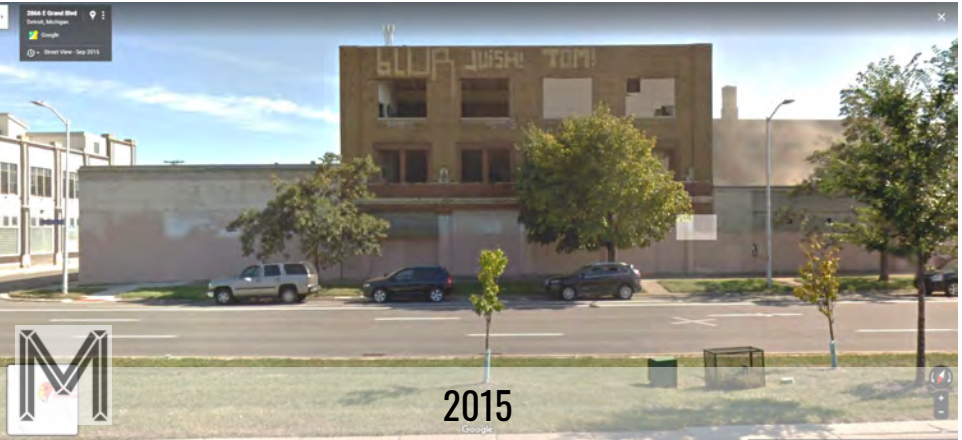
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CHANGES IN GRAFFITI AND PAINT ON E GRAND FACADE
FRONT WINDOWS MISSING SINCE 2011

2857 & 2863 E GRAND BLVD
NORTH ELEVATION OVER TIME









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BRICK CLEANING, PAINT & GRAFFITI REMOVAL

FROM THE BRICK INDUSTRY ASSOCIATION TECHNICAL NOTES ON BRICK CONSTRUCTION. WE PROPOSE TO CLEAN ALL EXISTING BRICK IN THE MANNER OUTLINED BY THIS DOCUMENT (SEE FULL DOCUMENT FOR MORE INFORMATION).

EAST GRAND
BRICK CLEANING, PAINT REMOVAL & RE-PAINTING

OUTLINE OF CLEANING PROCEDURE:
(THIS PROCESS WILL BE TESTED IN A SMALL AREA TO ENSURE NO HARM IS DONE TO THE EXISTING BRICK BEFORE APPLIED TO ENTIRE PROJECT)

- REMOVE MORTAR CLUMPS & DEBRIS
- PROTECT SURROUNDINGS
- THOROUGHLY SATURATE BRICK WITH WATER
- APPLY CLEANING SOLUTION IN ACCORDANCE WITH MFR RECS
 - WILL ATTEMPT FIRST WITH MILD DETERGENT
 - CHEMICAL CLEANING SOLUTION WILL BE USED IF REQUIRED IN AREAS WHERE EXISTING PAINT IS TO BE REMOVED
 - MASONRY CLEANING BRUSH WILL BE USED AND/OR PUMP SPRAYER AS REQUIRED
- SURFACE WILL BE RINSED THOROUGHLY

OUTLINE OF PAINT REMOVAL PROCEDURE:

- THE SAME PROCESS WILL BE APPLIED AS OUTLINED FOR BRICK CLEANING
- NON-ABRASIVE METHODS FOR REMOVING PAINT WILL BE TESTED FIRST - IF UNSUCCESSFUL, ABRASIVE SCRUBBING WITH NON-METALLIC BRUSHES WILL BE USED TO REMOVE PAINT
- MILD DETERGENT CLEANING SOLUTION WILL BE TESTED FIRST - IF UNSUCCESSFUL, A BRICK CLEANING SOLUTION WILL BE APPLIED PER THE PRODUCT'S MANUFACTURER RECOMMENDATIONS
- SANDBLASTING AND/OR MURIATIC ACID NOT TO BE USED

ONCE CLEANED, BRICK IS TO BE SEALED WITH A CLEAR SEALER. A MASONRY PRIMER WILL BE APPLIED, PLUS A 100% ACRYLIC PAINT TOPCOAT (COLORS SHOWN ON ELEVATIONS)



2857 & 2863 E GRAND BLVD
NORTH AND EAST ELEVATIONS



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2857 & 2863 E GRAND BLVD
SOUTH & EAST ELEVATIONS



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2857 & 2863 E GRAND BLVD
SOUTH ELEVATION



2857 & 2863 E GRAND BLVD
WEST ELEVATION



2857 & 2863 E GRAND BLVD
NORTH FACADE

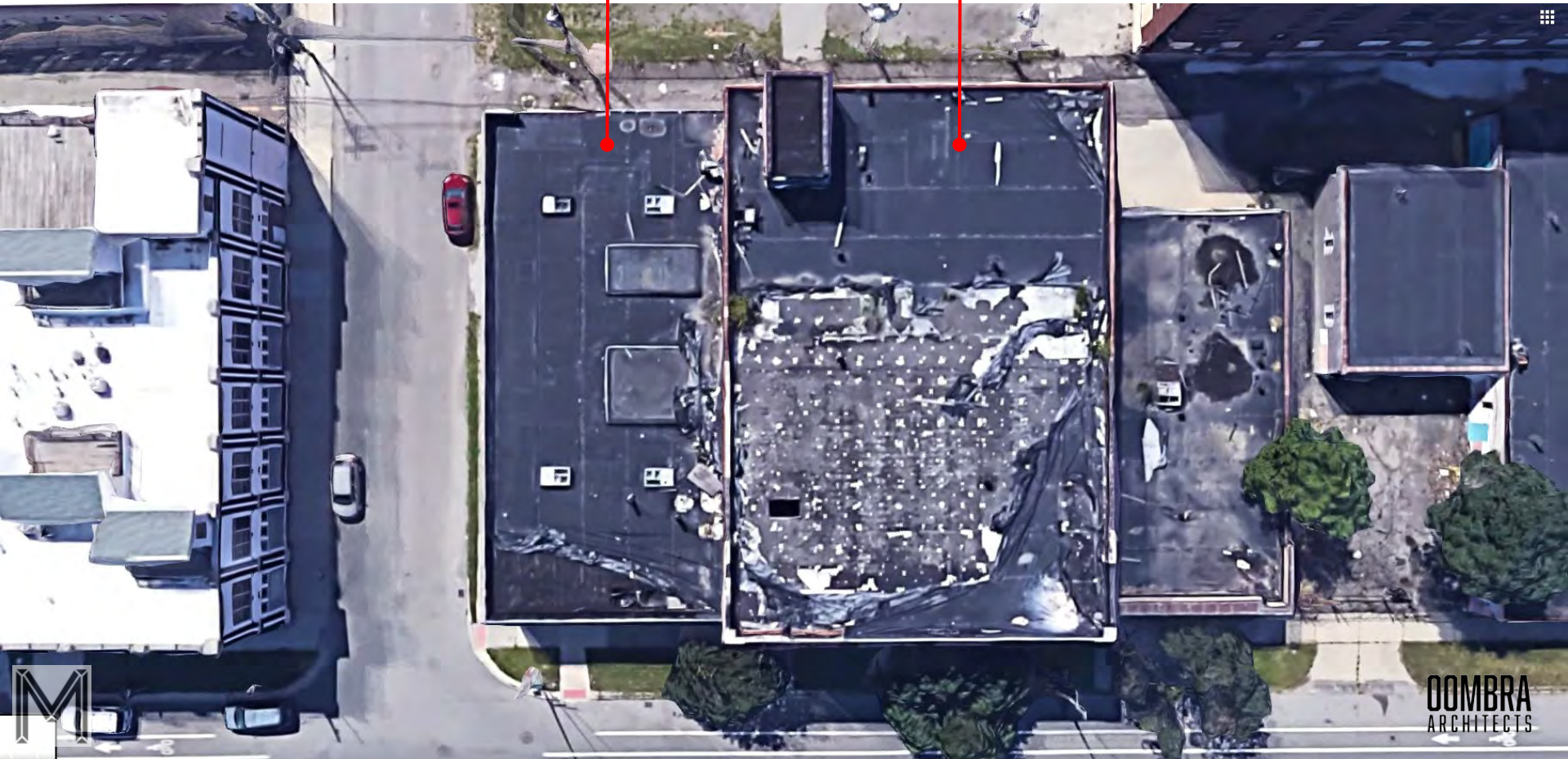






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2857 & 2863 E GRAND BLVD
ROOF



2863 E GRAND BLVD
ROOF



DOMBRA
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2863 E GRAND BLVD
ROOF

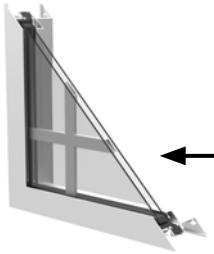




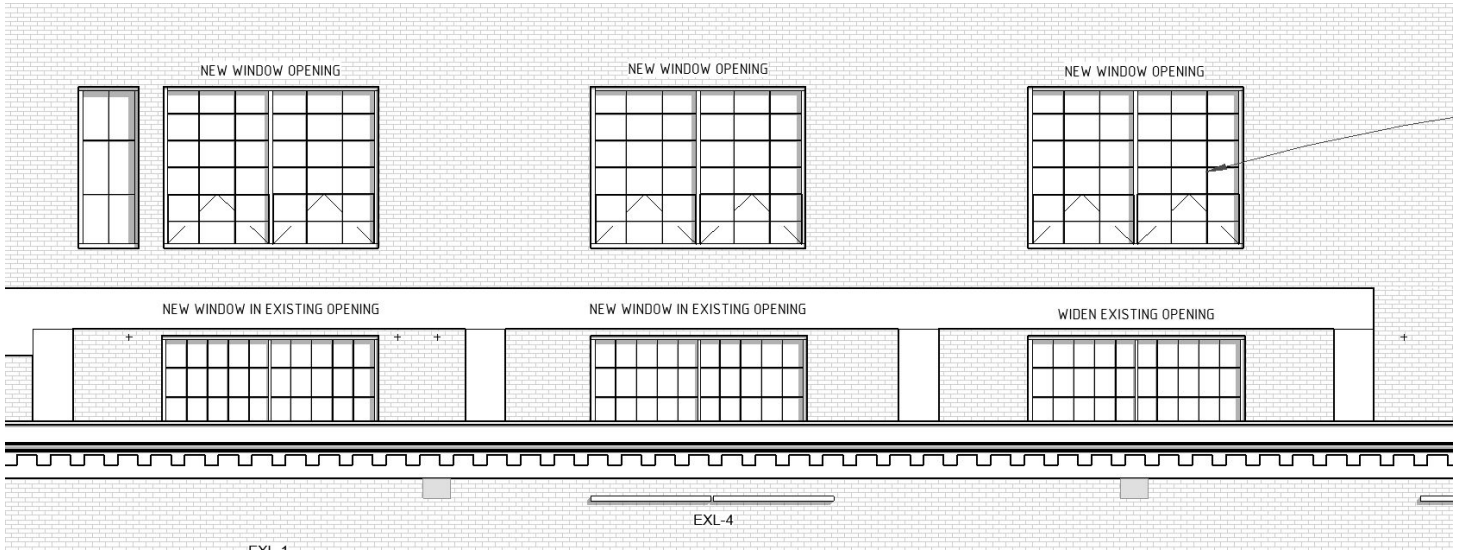
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2863 E GRAND
EAST ELEVATION | PROPOSED

SUMMARY OF WINDOW APPROACH:
MATCH LITE CONFIGURATION,
ALL OPERABLE PARTS OF WINDOWS MOVED TO BOTTOM OF WINDOW TO MEET ADA REACH RANGE REQUIREMENTS
WHERE NO EXISTING WINDOWS, MAKE ASSUMPTIONS BASED ON ADJACENT WINDOWS
ONE “TRUE VENT” OPERABLE WILL BE PROVIDED PER UNIT. ALL OTHERS SHOWN TO BE “FALSE VENTS”
ALL WINDOWS THIS FACADE TO BE AIR-SPACE GRILLE TO MATCH EXISTING LITE CONFIGURATION



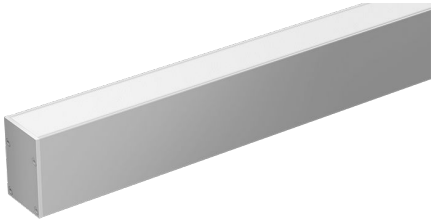
AIR-SPACE MUNTIN PROPOSED
FOR THIS ELEVATION



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EAST GRAND NORTH FACADE LIGHTING & FINISHES

- NEW WINDOWS IN EXISTING OPENINGS
- PAINT EXISTING BRICK
- NEW FACADE LIGHTING



WALL MOUNTED LINEAR
(WHITE)



NEON BUILDING SIGNAGE
(WHITE)



IN-GROUND UP-LIGHT
(BLACK)



WALL MTD. LIGHT
(BLACK)

EXISTING FACADES PROPOSED TO BE PAINTED THE FOLLOWING COLORS FROM THE HDC COLOR SYSTEM (ALL FACADES)

2857 E GRAND

C:4 Yellowish White
MS: 5Y 9/1

2863 E GRAND

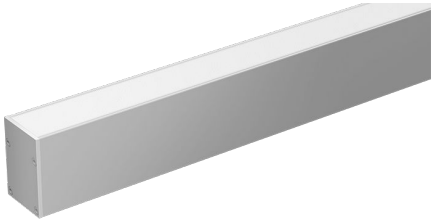
B:19 Black
MS: N 0.5/



OOMBRA ARCHITECTS

EAST GRAND SOUTH FACADE LIGHTING & FINISHES

- NEW WINDOWS IN EXISTING OPENINGS
- PAINT EXISTING BRICK
- NEW FACADE LIGHTING



WALL MOUNTED LINEAR
(WHITE)



NEON BUILDING SIGNAGE
(WHITE)



IN-GROUND UP-LIGHT
(BLACK)



WALL MTD. LIGHT
(BLACK)



BRICK TO MATCH SIZE AND TEXTURE OF EXISTING, TO BE PAINTED BLACK TO MATCH REST OF FACADE (BRICK SHOWN IS CUSHWA BRICK JBO STD ANTIQUE)

DOMBRA ARCHITECTS

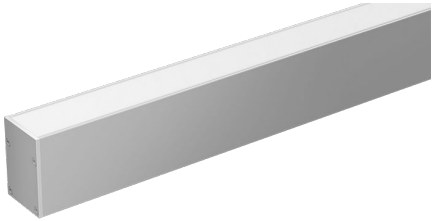
EAST GRAND
EAST FACADE
LIGHTING & FINISHES

- NEW WINDOWS IN EXISTING OPENINGS

- PAINT EXISTING BRICK

- NEW FACADE LIGHTING

- REPLACE OVERHEAD DOOR, COLOR TO MATCH BRICK



WALL MOUNTED LINEAR
(WHITE)



WALL MTD. LIGHT
(BLACK)



MURAL OR PROJECTED SIGNAGE BY FUTURE TENANT / OWNER IN THIS AREA OF FACADE (NO TEXT OR IMAGERY DETERMINED AT THIS TIME)

2863 E GRAND

B:19 Black
MS: N 0.5/

2857 E GRAND

C:4 Yellowish White
MS: 5Y 9/1

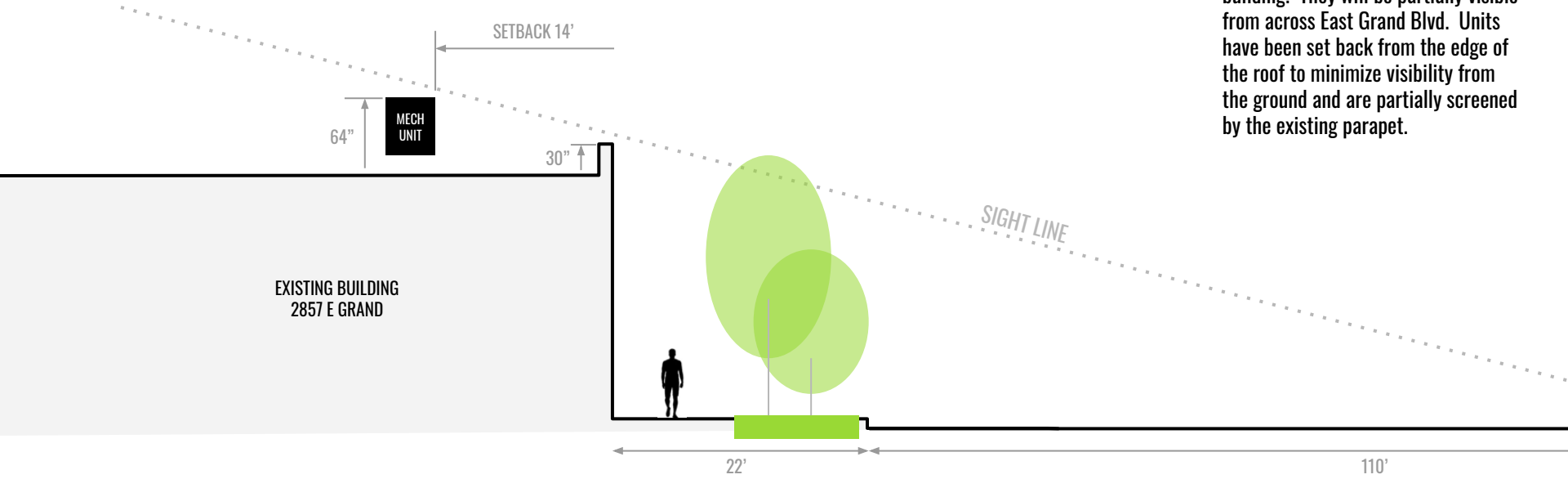
SEE PREVIOUS WINDOW SHEET FOR PROPOSED WINDOWS



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ROOFTOP EQUIPMENT SIZE AND VISIBILITY

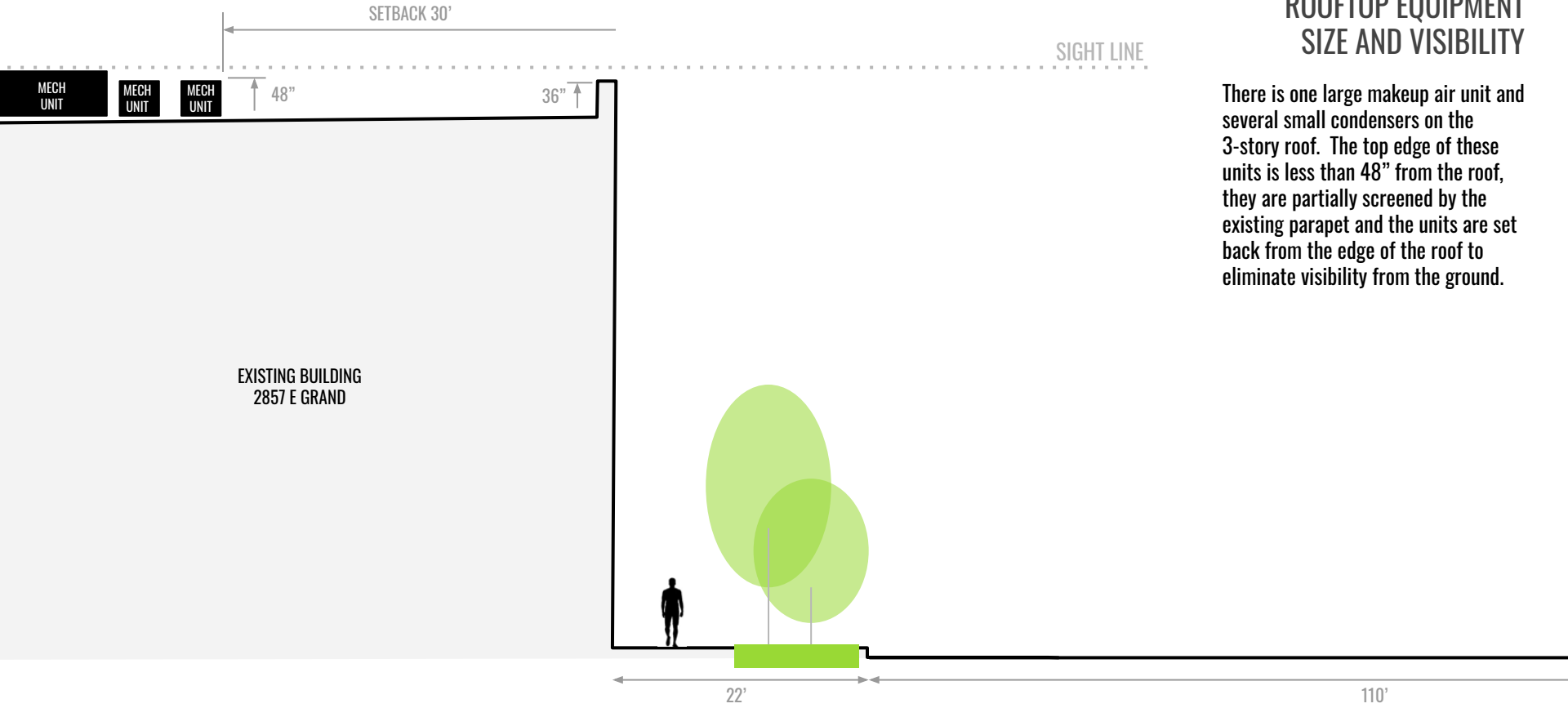
There are 3 rooftop mechanical units proposed to heat and cool the 1-story building. These units are 50” tall and sit on a 14” curb. They will not be visible from the sidewalks around the building. They will be partially visible from across East Grand Blvd. Units have been set back from the edge of the roof to minimize visibility from the ground and are partially screened by the existing parapet.



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ROOFTOP EQUIPMENT SIZE AND VISIBILITY

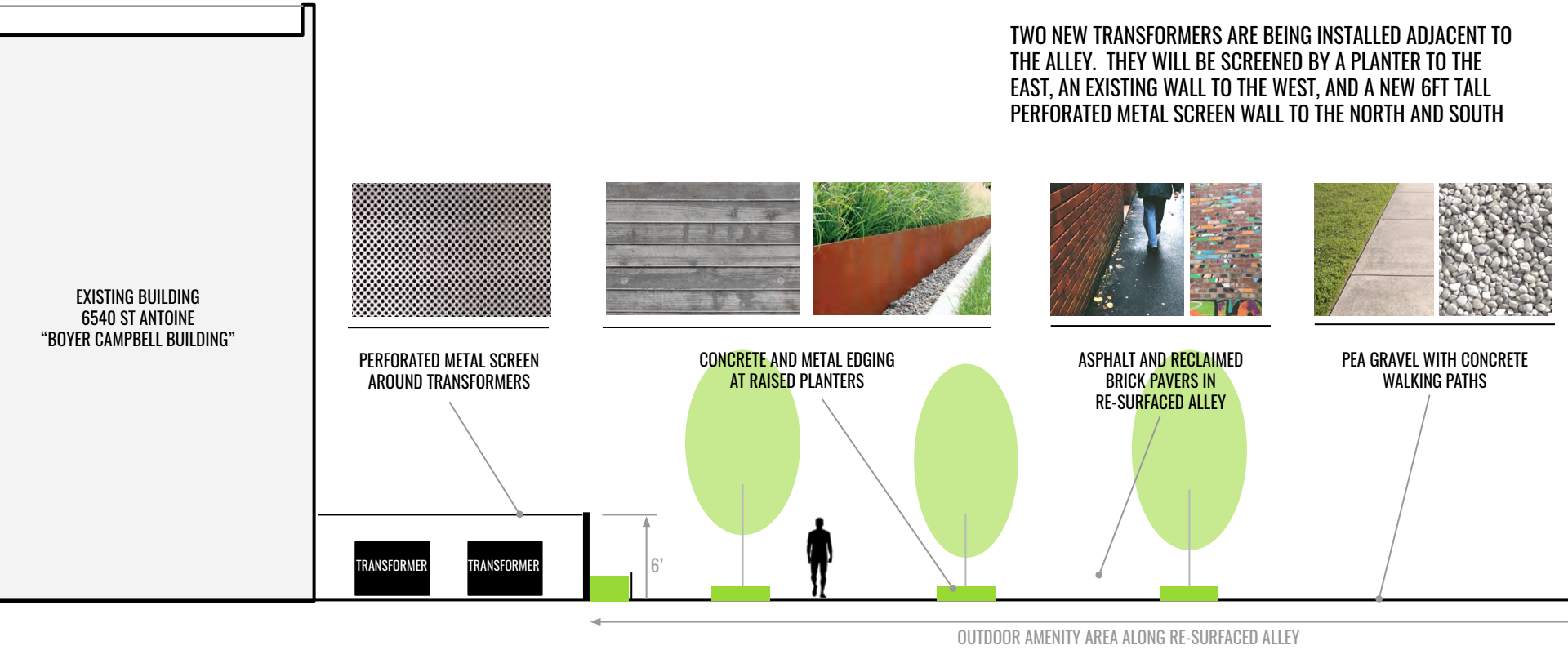
There is one large makeup air unit and several small condensers on the 3-story roof. The top edge of these units is less than 48” from the roof, they are partially screened by the existing parapet and the units are set back from the edge of the roof to eliminate visibility from the ground.



OOMBRA ARCHITECTS

NEW TRANSFORMERS AND SCREEN ENCLOSURE ADJACENT TO NORTH ALLEY

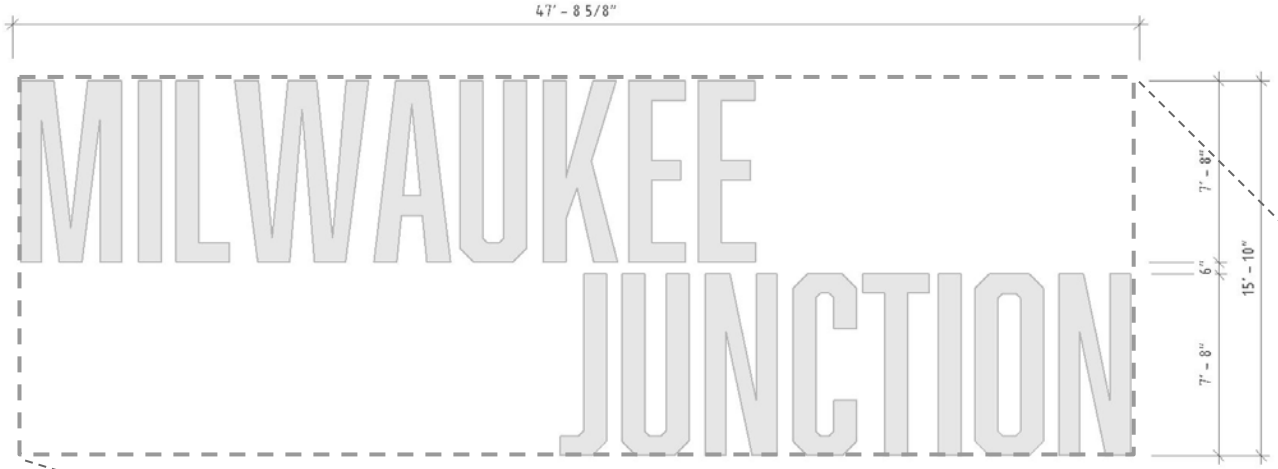
TWO NEW TRANSFORMERS ARE BEING INSTALLED ADJACENT TO THE ALLEY. THEY WILL BE SCREENED BY A PLANTER TO THE EAST, AN EXISTING WALL TO THE WEST, AND A NEW 6FT TALL PERFORATED METAL SCREEN WALL TO THE NORTH AND SOUTH

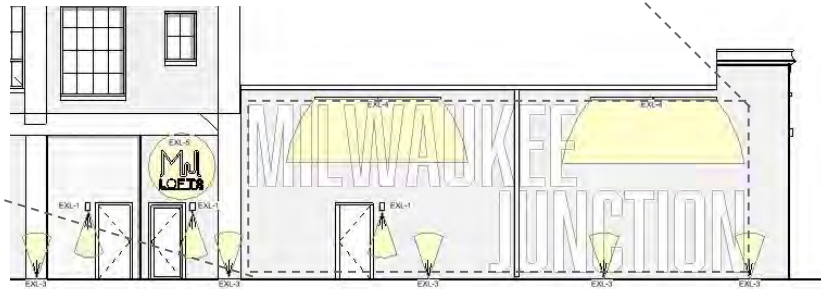


OOMBRA ARCHITECTS

ENLARGED SIGNAGE LOCATIONS

PAINTED BLOCK LETTER SIGNAGE ON
SOUTH FACADE OF 2857 E GRAND BLVD.
PAINT COLOR: LIGHT GRAY

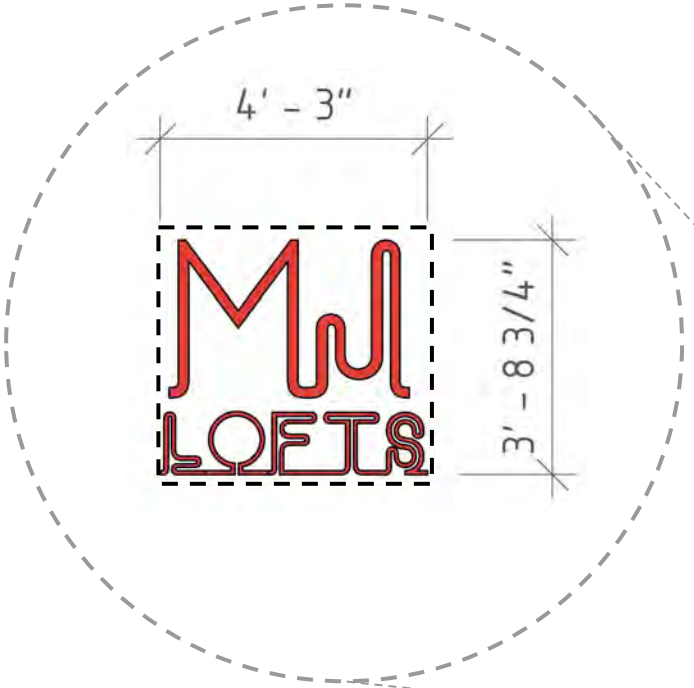


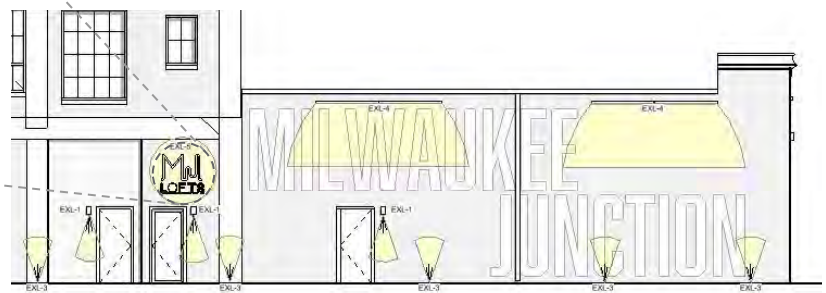


OOMBRA
ARCHITECTS

ENLARGED SIGNAGE LOCATIONS

NEON SIGNAGE ON SOUTH FACADE
OF 2863 E GRAND BLVD. AT
RESIDENTIAL ENTRY
COLOR: RED
TEXT SUBJECT TO CHANGE

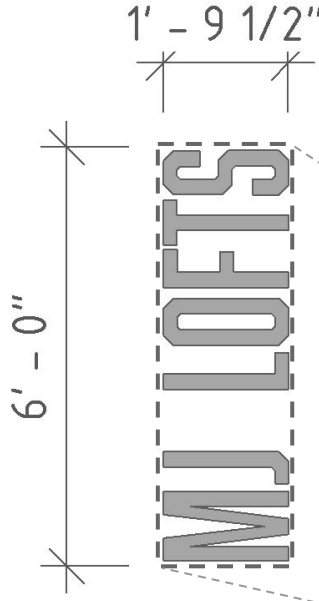




OOMBRA
ARCHITECTS

ENLARGED SIGNAGE LOCATIONS

STEEL BLOCK LETTER SIGNAGE ON NORTH FACADE OF 2863 E GRAND BLVD. AT RESIDENTIAL ENTRY
COLOR: NATURAL STEEL
TEXT SUBJECT TO CHANGE





OOMBRA ARCHITECTS

2857 & 2863 E GRAND BLVD



OOMBRA
ARCHITECTS

2857 & 2863 E GRAND BLVD

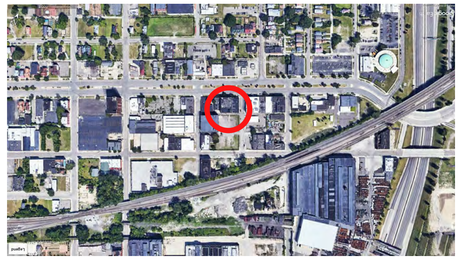



OOMBRA
ARCHITECTS

RENOVATION OF 2857 & 2863 E GRAND BLVD

DIAGRAMS & LEGENDS

LOCATION MAPS



GENERAL NOTES

1. ALL GENERAL NOTES ARE DIRECTED TO THE CONTRACTOR AND SUBCONTRACTORS RESPONSIBLE FOR BIDDING AND CONSTRUCTION OF THE WORK OF THIS PROJECT.
2. PRIOR TO SUBMITTING A BID/PRICE, VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT, INCLUDING DEMOLITION, MECHANICAL AND ELECTRICAL INSTALLATIONS.
3. VERIFY ALL SITE CONDITIONS, DIMENSIONS AND DETAILS PRIOR TO CONSTRUCTION. NOTIFY THE ARCHITECT AND OWNER OF DISCREPANCIES THAT WOULD INTERFERE WITH THE SATISFACTORY
COMPLETION OF THE WORK. OBTAIN CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.
4. DO NOT SCALE DRAWINGS. DRAWINGS ARE DIAGRAMMATIC. THE WORK INDICATED ON THE DRAWINGS SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE THE WORK.
5. COORDINATE, FILE, OBTAIN AND PAY FOR FEES FOR BUILDING PERMITS, INSPECTIONS AND AGENCY APPROVALS (AS APPROPRIATE). FORWARD COPIES OF TRANSACTIONS AND PERMITS TO THE ARCHITECT AND OWNER PRIOR TO COMMENCING WORK.
6. REVIEW SHOP DRAWINGS AND OTHER INFORMATION BEFORE SUBMITTING THEM TO THE ARCHITECT. ARCHITECT WILL NOT REVIEW ANY SUBMITTALS WITHOUT CONTRACTOR'S SIGNED REVIEW STAMP. ARCHITECT WILL REVIEW SUBMITTALS FOR DESIGN INTENT. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, COORDINATION WITH OTHER TRADES, MEANS OF INSTALLATION AND WORK TO BE
PERFORMED BY ITS SUBCONTRACTORS.
7. WORK TO CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE (AS APPLICABLE) THE OWNER/CONTRACTOR AGREEMENT, THE GENERAL AND SUPPLEMENTARY CONDITIONS, THE TECHNICAL SPECIFICATIONS, THE DRAWINGS, ALL ADDENDA ISSUED DURING BIDDING, AND ALL BULLETINS ISSUED DURING CONSTRUCTION.
8. WORK TO CONFORM TO ALL APPLICABLE CITY, STATE AND FEDERAL LAWS, CODES, STATUES AND ORDINANCES REGARDING CONSTRUCTION, SAFETY, ACCESSIBILITY AND SANITATION. REPORT ANY DISCREPANCIES, VARIATIONS OR OMISSIONS DISCOVERED PROMPTLY TO THE ARCHITECT AND OWNER.
9. MAINTAIN ALL CODE-REQUIRED EXITS, EXIT SIGNS, EMERGENCY LIGHTS, SECURITY SYSTEMS, ALARMS AND FIRE PROTECTION SYSTEMS (IF ANY) IN OPERABLE CONDITION THROUGHOUT THE CONTRACT PERIOD.
10.PROTECT THE BUILDING PREMISES AND OCCUPANTS FROM DAMAGE. PROVIDE TEMPORARY PROTECTIVE COVERS, BARRIERS, DUST PROOFING, SHORING OR OTHER TEMPORARY MEASURES AS REQUIRED. REPAIR IN KIND ANY DAMAGE TO EXISTING SURFACES OR EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
11.COORDINATE ALL WORK SCHEDULES, EQUIPMENT LOCATIONS, MATERIAL DELIVERIES, AND STORAGE OF MATERIALS WITH THE OWNER'S BUILDING MANAGEMENT, INCLUDING ELEVATOR USE AND CLEARANCES, LOUD OR DISRUPTIVE NOISE, ACCESS TO THE BUILDING, AND TIMING.
12.MAINTAIN A FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF THE PROJECT AREA DURING CONSTRUCTION.
13.WHERE DIMENSIONS ON DRAWINGS ARE TO FINISHED SURFACES, PROVIDE PROPER CLEARANCES AND DIMENSIONS OF ROUGH SURFACES TO ACCOMMODATE FINISH MATERIALS.
14.INSTALL ALL EQUIPMENT AND MATERIALS PER MANUFACTURER'S RECOMMENDATIONS, UNLESS SPECIFICALLY OTHERWISE INDICATED, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE. ALL WORK PERFORMED AND MATERIALS PROVIDED TO MEET THE CURRENT INDUSTRY STANDARDS.
15.INSTALL ALL ELECTRICAL WORK PER THE NATIONAL ELECTRICAL CODE AND IN ACCORDANCE WITH APPLICABLE UTILITY COMPANY REQUIREMENTS, CODES, REGULATIONS AND ORDINANCES.
16.OWNER PROVIDES TELEPHONE AND DATA EQUIPMENT SPECIFICATIONS PERFORMANCE, INSTALLATION AND FINAL LOCATIONS. CONTRACTOR TO COORDINATE ITS WORK REQUIREMENTS BY OTHERS RELATED TO THIS EQUIPMENT.
17.VERIFY ALL FINAL EQUIPMENT LOCATIONS WITH THE ARCHITECT OR THE OWNER, INCLUDING, SWITCHES, CONTROLS, RECEPTACLES, HVAC ITEMS, TELEPHONES, AND SECURITY DEVICES.
18.SEAL ANY PENETRATIONS THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS WITH U.L. LISTED OR F.M. APPROVED SEALANT MATERIALS.
19.PROVIDE SUPERVISION WHILE ANY SUBCONTRACTORS OR WORKERS ARE ON THE JOB SITE, SUPERVISE AND DIRECT ALL WORK. WORKERS ARE NOT TO ASK THE OWNER OR OTHER OCCUPANTS FOR INFORMATION OR DIRECTION RELATED TO THE WORK TO BE DONE, ACCESS TO THE WORK, OR SCHEDULES.
20.MAINTAIN ALL SYSTEMS AND EQUIPMENT IN CLEAN WORKING ORDER UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER.
21.PERFORM CLEAN-UP AND SAFETY PROCEDURES, KEEP THE PROJECT AREA CLEAN AND HAZARD-FREE. PROPERLY DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND EQUIPMENT REMOVED AND NOT SPECIFIED TO BE SALVAGED FOR USE BY THE OWNER. LEAVE PREMISES IN A VACUUM AND BROOM CLEAN CONDITION AT THE END OF EVERY WORK PERIOD, AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
22.COORDINATE LOCATION OF WALL AND PARTITION FRAMING TO AVOID CONFLICT WITH MECHANICAL, ELECTRICAL, FIRE PROTECTION AND RELATED WORK.
23.PROVIDE BLOCKING CONCEALED WITHIN WALL AND PARTITION FRAMING FOR SECURE ATTACHMENT OF CABINETS. ACCESSORIES AND RELATED INTERIOR WORK.
24.ALL STRUCTURAL DESIGN WORK BY OTHERS.



SHEET LIST

Sheet #	Sheet Name	FEASIBILITY DOCUMENTS	95% SCHEMATIC DOCUMENTS	100% SCHEMATIC DOCUMENTS	DESIGN DEVELOPMENT
GENERAL					
A0.00	COVER SHEET	■	■	■	■
A0.01	CODE REVIEW		■	■	■
ARCHITECTURAL					
A0.10	DEMOLITION PLANS				■
A1.00	SITE PLAN	■	■	■	■
A2.01	LEVEL 1 - FLOOR PLAN	■	■	■	■
A2.02	LEVEL 2 FLOOR PLAN	■	■	■	■
A2.03	LEVEL 3 - FLOOR PLAN	■	■	■	■
A2.04	ROOF PLAN		■	■	■
A3.01	EXTERIOR ELEVATIONS	■	■	■	■
A3.02	EXTERIOR ELEVATIONS	■	■	■	■
A3.10	BUILDING SECTIONS			■	■
A3.20	WALL SECTIONS				■
A3.21	WALL SECTIONS				■
A3.30	EXTERIOR SECTION DETAILS				■
A3.31	EXTERIOR SECTION DETAILS				■
A4.10	1 BEDROOM UNIT				■
A4.11	2 BEDROOM UNIT				■
A4.12	1 BEDROOM UNIT				■
A4.13	1 BEDROOM UNIT				■
A4.14	1 BEDROOM UNIT				■
A4.15	STUDIO UNIT				■
A5.00	COMMON CORRIDOR				■
A5.01	RESIDENTIAL LOBBY				■
A5.10	INTERIOR SECTIONS & DETAILS				■
A6.01	LEVEL 1 - REFLECTED CEILING PLAN				■
A6.02	LEVEL 2&3 REFLECTED CEILING PLAN				■
A7.00	ENLARGED STAIR & ELEVATOR PLANS				■
A7.01	ENLARGED STAIR & ELEVATOR PLANS				■
A8.00	PARTITION TYPES & DETAILS				■
A8.10	SCHEDULES - DOORS, WINDOWS, FINISHES				■
MECHANICAL					
M0.00	LEGENDS, SYMBOLS, AND ABBREVIATIONS				■
M1.01	LEVEL 1 MECHANICAL NEW WORK PLAN				■
M1.02	LEVEL 2 MECHANICAL NEW WORK PLAN				■
M1.03	LEVEL 3 MECHANICAL NEW WORK PLAN				■
M1.04	ROOF MECHANICAL NEW WORK PLAN				■
M2.00	MECHANICAL DETAILS & DIAGRAMS				■
M3.00	TEMPERATURE CONTROLS DIAGRAMS				■
M4.00	MECHANICAL SCHEDULES				■
ELECTRICAL					
E101.1	ELECTRICAL LEGENDS AND SYMBOLS				■
E101.2	ELECTRICAL LEGENDS AND SYMBOLS				■
E201.0	BASEMENT ELECTRICAL PLAN				■
E201.1	FIRST FLOOR ELECTRICAL PLAN				■
E201.2	SECOND FLOOR ELECTRICAL PLAN				■
E201.3	THIRD FLOOR ELECTRICAL PLAN				■
E201.4	ROOF ELECTRICAL PLAN				■
E401.1	ENLARGED ELECTRICAL PLANS				■
E601.1	ELECTRICAL ONE LINE DIAGRAM				■
PLUMBING					
P0.00	LEGENDS, SYMBOLS, AND ABBREVIATIONS				■
P1.00	UNDERGROUND PLUMBING NEW WORK PLAN				■
P1.01	LEVEL 1 PLUMBING NEW WORK PLAN				■
P1.02	LEVEL 2 PLUMBING NEW WORK PLAN				■
P1.03	LEVEL 3 PLUMBING NEW WORK PLAN				■
P1.04	ROOF PLUMBING NEW WORK PLAN				■
P2.00	PLUMBING DETAILS				■
P3.00	PLUMBING DIAGRAMS				■
P4.00	PLUMBING SCHEDULES				■

SYMBOLS

MASTER BATH
227
PT1 HDWD WD
ROOM TAG

ROOM NAME
ROOM #
WALL FIN FLOOR FIN WALL BASE

03 006
KEYNOTE TAG
PROJECT KEYNOTE - CSI SECTION, FOLLOWED BY SPECIFIC NOTE

D 1 A
PARTITION TAG
PARTITION TYPE | FIRE RATING | ACCOUSTICAL RATING

WINDOW TAG

DOOR TAG

MATERIALS

EXISTING
METAL
COMPACTED EARTH/FILL
GYPSUM WALL BOARD
GRAVEL
RIGID INSULATION
CONCRETE
BATT INSULATION
CONCRETE MASONRY UNIT
CONTINUOUS BLOCKING
STONE
DISCONTINUOUS BLOCKING
BRICK
PLYWOOD
GROUT
FINISH WOOD

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FTG	FOOTING
ACT	ACCOUSTIC CEILING TILE	GL	GLASS / GLAZING
ARCH	ARCHITECTURAL	GYP	GYPSUM BOARD
CPT	CARPET	HDCP	HANDICAPPED
CT	CERAMIC TILE	HDWD	HARDWOOD
CLR	CLEAR	INT	INTERIOR
CFMF	COLD FORMED METAL FRAMING	MTL	METAL
COL	COLUMN	MIN	MINIMUM
CONT	CONTINUOUS	NIC	NOT IN CONTRACT
CTR	COUNTER	NTS	NOT TO SCALE
DIM	DIMENSION	PT	PAINT
DN	DOWN	RM	ROOM
EXP	EXPOSED	RO	ROUGH OPENING
FF	FINISHED FLOOR	ST	STONE
FIN	FINISH(ED)	WB	WALL BASE
FT	FEET	WD	WOOD

NOT FOR CONSTRUCTION

1014 OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST, SUITE 700
DETROIT, MI 48226

ARCHITECT
OOMBRA ARCHITECTS, LLC.
PHILADELPHIA, PA
WWW.OOMBRA.COM
215.948.2564

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ETS ENGINEERING, INC.
P.O. BOX 1116 ROYAL OAK, MI 48068
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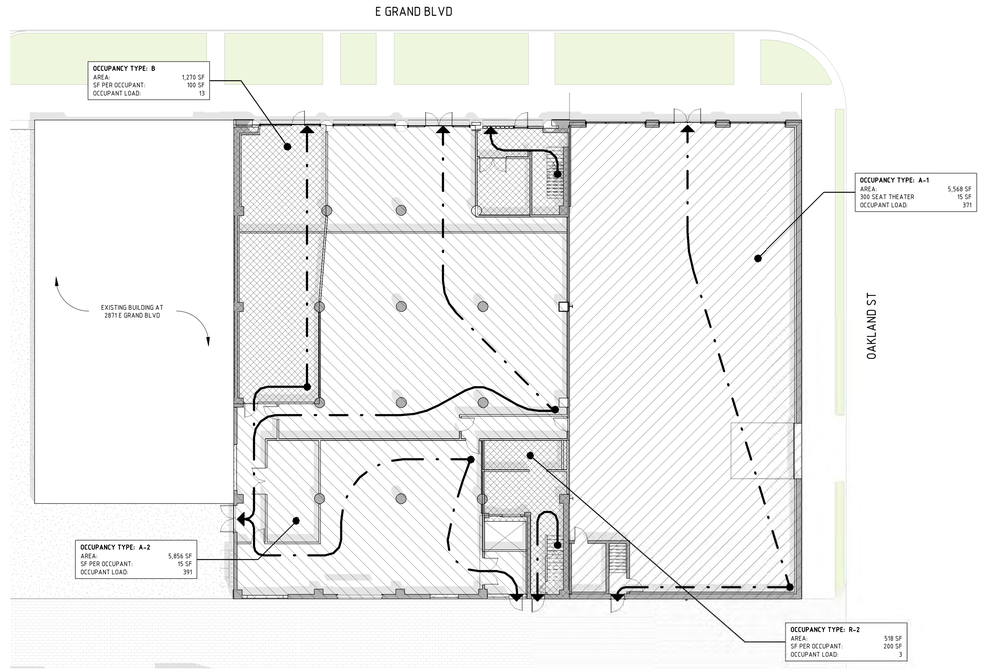
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FEASIBILITY DOCUMENTS	01.25.2019
95% SCHEMATIC DESIGN	05.10.2019
100% SCHEMATIC DOCUMENTS	06.06.2019
DESIGN DEVELOPMENT	08.02.2019

COVER SHEET

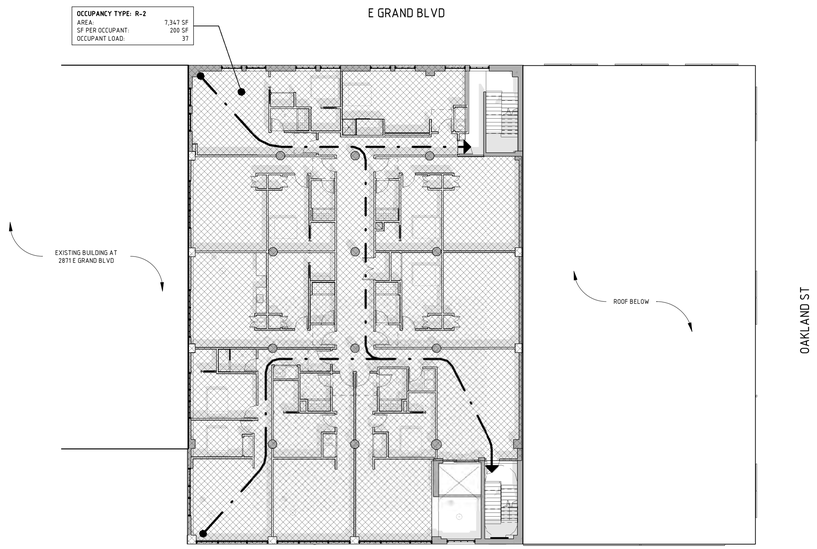
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1 E GRAND CODE REVIEW_LEVEL 1
Scale: 1/16" = 1'-0"



2 E GRAND CODE REVIEW_LEVELS 2&3
Scale: 1/16" = 1'-0"

GROSS AREA

2857 E GRAND	L1	5,569 SF
2863 E GRAND	L1	8,029 SF
2863 E GRAND	L2	8,029 SF
2863 E GRAND	L3	8,029 SF
		29,655 SF

UNIT SCHEDULE

Level 2

STUDIO	409 SF
1 BED	624 SF
1 BED	678 SF
1 BED	685 SF
1 BED	695 SF
1 BED	698 SF
1 BED	702 SF
1 BED	770 SF
2 BED	878 SF

Level 3

STUDIO	419 SF
1 BED	629 SF
1 BED	689 SF
1 BED	698 SF
1 BED	702 SF
1 BED	703 SF
1 BED	704 SF
1 BED	738 SF
2 BED	886 SF
18	12,306 SF

CODE REVIEW

ROJECT LOCATION
2857 & 2863 E Grand Blvd
Detroit, MI 48202

BUILDING HEIGHT
39'-4" (27'-4" to highest occupied floor)

GROSS BUILDING AREA
Level 1 : 13,598 GSF
Level 2 : 8,029 GSF
Level 3 : 8,029 GSF

Total : 29,656 GSF

OCCUPANCY CLASSIFICATION (IBC 2015; 303, 310)
Assembly Group A - A-2 (Restaurant) & A-1 (Theater)
Residential Group R - R-2 (Apartment Houses)

SPECIAL DETAILED REQUIREMENTS BASED ON USE & OCCUPANCY (IBC 2015; 420)
DWELLING UNIT SEPARATION WALLS - 1 HR FIRE PARTITION (IBC 2015; 420.2, 708.3)
DWELLING UNIT HORIZONTAL ASSEMBLIES - 0.5 HR FIRE RATING (IBC 2015; 420.3, 711.2.4.3)
AUTOMATIC SPRINKLER SYSTEM REQUIRED (IBC 2015; 420.5)
FIRE ALARM & SMOKE ALARMS REQUIRED (IBC 2015; 420.6)

BUILDING HEIGHT & AREA LIMITATIONS (IBC 2015; 503, 508)

(assuming sprinklered throughout)	Max Height:	Max Stories:	Max Area:
Assembly Group A-1 (Theater)	75 ft	3	25,500 sf
Assembly Group A-2 (Restaurant)	75 ft	3	28,500 sf
Residential Group R-2 (Apartment Houses)	75 ft	5	48,000 sf

CONSTRUCTION CLASSIFICATION (IBC 2015; 602)
CONSTRUCTION CLASSIFICATION IIB

FIRE RESISTANCE RATING REQUIREMENTS (IBC 2015; 601)
0 Hrs - PRIMARY STRUCTURAL FRAME
0 Hrs - BEARING WALLS EXTERIOR
0 Hrs - BEARING WALLS INTERIOR
0 Hrs - NON-BEARING WALLS EXTERIOR
0 Hrs - NON-BEARING WALLS INTERIOR
0 Hrs - FLOOR CONSTRUCTION
0 Hrs - ROOF CONSTRUCTION

1 Hrs if < 4 stories or 2 Hrs if 4+ stories - SHAFT WALLS (IBC 2015; 713.4)
1 Hrs if < 4 stories or 2 Hrs if 4+ stories - ELEVATOR HOIST (IBC 2015; 713.4)
1 Hrs - DWELLING UNIT SEPARATION WALLS (IBC 2015; 420.2, 708.3)
0.5 Hrs - CORRIDOR WALLS

ACCESSIBLE MEANS OF EGRESS (IBC 2015; 1006)
Min Exits Required = 2 Exits Per Story per IBC 2015; 1006.3.1
Areas of Refuge (Stairways) NOT REQUIRED per IBC 2015; 1009.3 exception 5 (sprinklered)
Areas of Refuge (Elevators) NOT REQUIRED per IBC 2015; 1009.4 exception 2 (sprinklered)
Elevator Lobbies NOT REQUIRED per IBC 2015; 3006.2, 3006.3 (sprinklered & not highrise)
Two-Way Communication: REQUIRED per IBC 2015; 1009.8

COMMON PATH OF EGRESS TRAVEL (IBC 2015; 1006)
Group A = 75 ft
Group R-2 = 125 ft

EXIT ACCESS TRAVEL DISTANCE (IBC 2015; 1017)
Max Exit Access Travel Distance = 250 ft

CORRIDORS (IBC 2015; 1020.2)
Minimum Width
Level 1, Occupant Load > 50, MIN WIDTH = 44 in
Levels 2 & 3, Occupant Load < 50, MIN WIDTH = 36 in
Maximum Dead End
Level 1, 20 ft per IBC 1020.4
Levels 2&3, 50 ft per IBC 1020.4 exception 2 for R-2

NUMBER OF EXITS (IBC 2015; 1006.3)
1 - 500 occupants = 2 exits min from each story
501-1,000 occupants = 3 exits min from each story

EXIT ENCLOSURES (IBC 1023.2)
1-hour fire-resistance rating (connecting less than four stories)

EXIT PASSAGEWAYS (IBC 1024.2)
Min Width = 36 in, occupant load less than 50

ACCESSIBILITY: DWELLING UNITS (IBC 2015; 1107.6.2)
Accessible Units Without Roll-In Showers - (1) IBC 1107.6.1.1
Accessible Units With Roll-In Showers - (0) IBC 1107.6.1.1
Type A Units - (0) because not more than 20 dwelling units are provided
Type B Units - (18) Every Unit

APPLICABLE CODES:

2015 MICHIGAN REHABILITATION CODE
(2015 IEBC WITH AMENDMENTS)
2015 MICHIGAN ENERGY CODE
(2015 IECC WITH AMENDMENTS)
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL ELECTRICAL CODE
2015 INTERNATIONAL PLUMBING CODE
2015 INTERNATIONAL FIRE CODE

LEGEND:

2 HR FIRE BARRIER
1 HR FIRE BARRIER
0.5 HR FIRE BARRIER
PATH OF TRAVEL
EXIT LOCATION

1014
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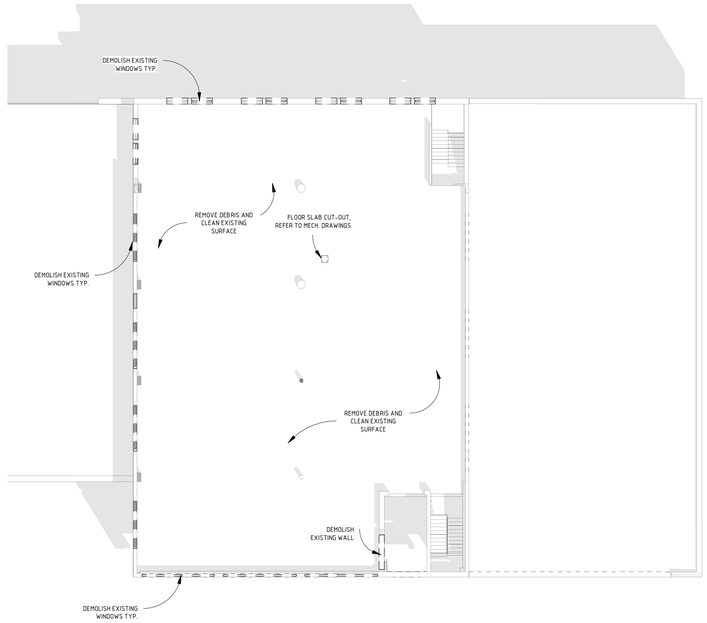
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DRAWING ISSUE	DATE
100% SCHEMATIC DOCUMENTS	06.06.2019
DESIGN DEVELOPMENT	08.02.2019

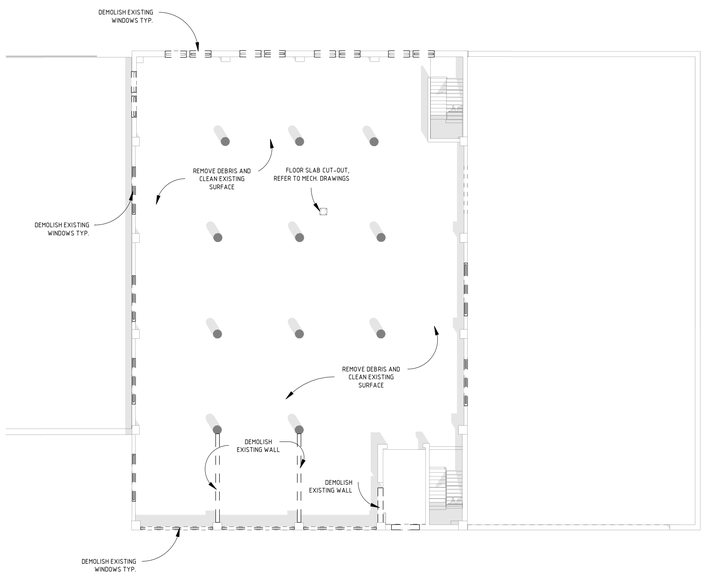
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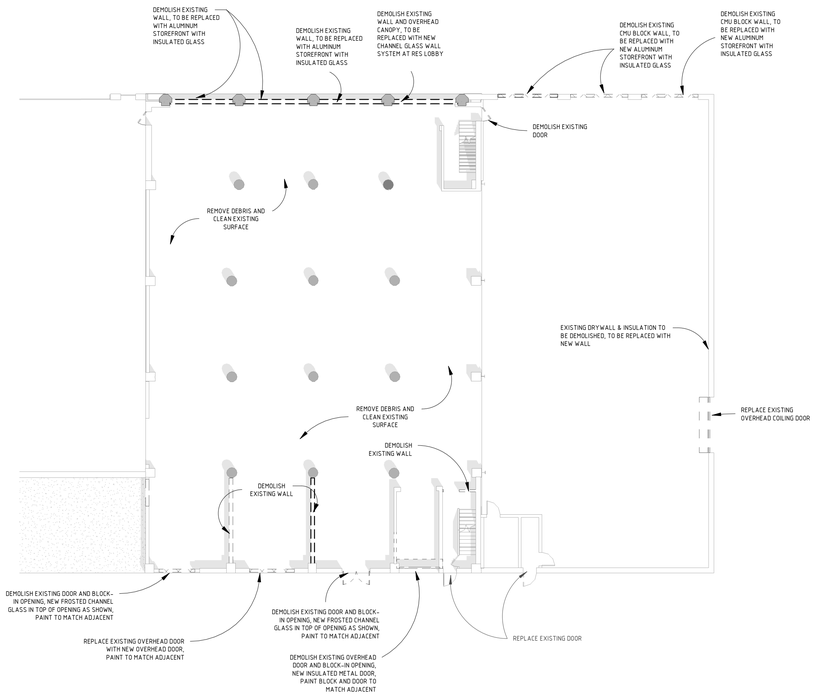
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3 LEVEL 3 DEMOLITION PLAN
Scale: 1/16" = 1'-0"



2 LEVEL 2 DEMOLITION PLAN
Scale: 1/16" = 1'-0"



1 LEVEL 1 DEMOLITION PLAN
Scale: 1/16" = 1'-0"

1014
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EAST GRAND BLVD
DETROIT MI 48202

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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

DEMOLITION PLANS

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2857



2863



2881



2871



1 SITE PLAN
Scale: 1" = 20'-0"

NOT FOR CONSTRUCTION

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

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METHOD DEVELOPMENT
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P.O. BOX 1116 ROYAL OAK, MI 48068
418-1/2 S. WASHINGTON AVE. ROYAL OAK, MI 48067
215.948.2564

FOR REFERENCE, UNDER SEPARATE CONTRACT:
CIVIL ENGINEER
STONEFIELD
607 SHELBY STREET, SUITE 200
Detroit, MI 48226
248.247.1115

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SITE PLAN

A1.00

SCALE : AS INDICATED 8/2/2019 8:03:11 PM



1 E GRAND LEVEL 1
Scale: 1/8" = 1'-0"

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1014 OOMBRA PROJECT

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
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LEVEL 1 - FLOOR PLAN

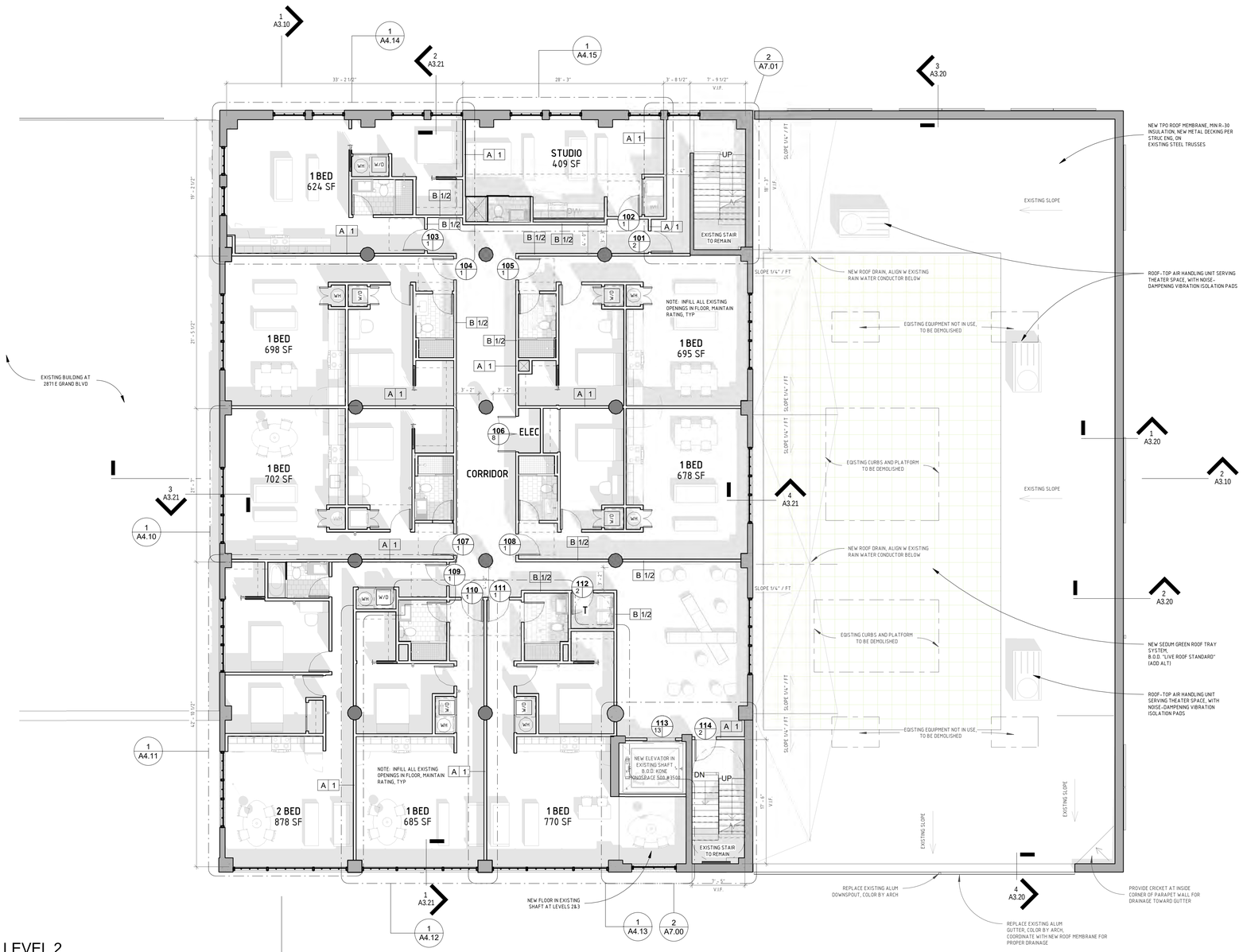
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SCALE : AS INDICATED 8/2/2019 8:04:12 PM

E GRAND BLVD

NOTE: NEW WINDOWS IN ALL EXISTING OPENINGS AT LEVEL 2

NOTE: INFILL ALL EXISTING OPENINGS IN FLOOR, MAINTAIN RATING, TYP



1 E GRAND LEVEL 2
Scale: 1/8" = 1'-0"

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1014 OOMBRA PROJECT

2857; 2863
EAST GRAND BLVD
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LEVEL 2 FLOOR PLAN

A2.02

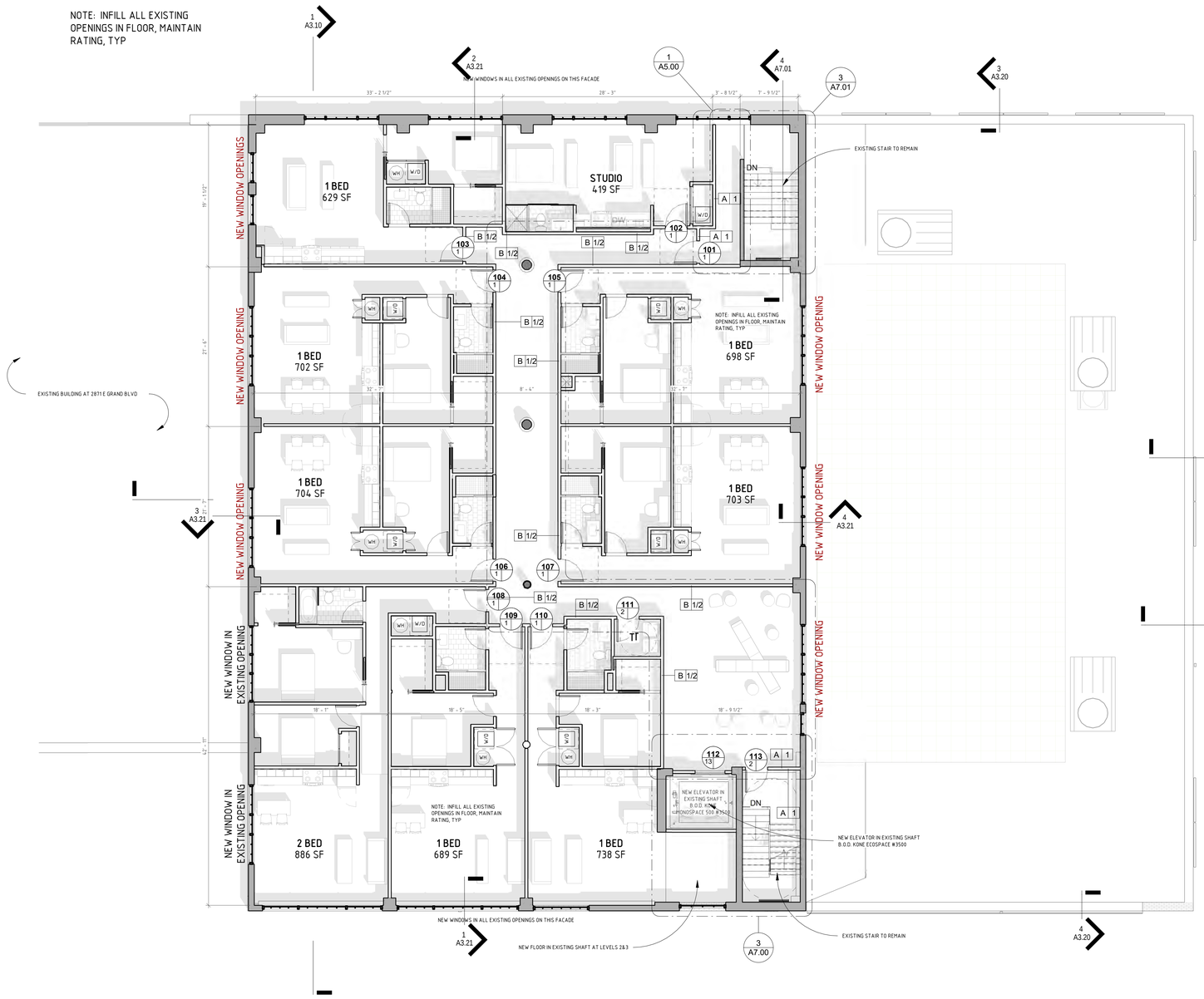
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E GRAND BLVD

NOTE: NEW WINDOWS IN ALL EXISTING OPENINGS AT LEVEL 3, V.I.F. EXISTING OPENING DIMS.

NOTE: SEE LEVEL 2 PLAN FOR UNIT LAYOUTS

NOTE: INFILL ALL EXISTING OPENINGS IN FLOOR, MAINTAIN RATING, TYP



1 E GRAND LEVEL 3
Scale: 1/8" = 1'-0"

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EAST GRAND BLVD
DETROIT MI 48202

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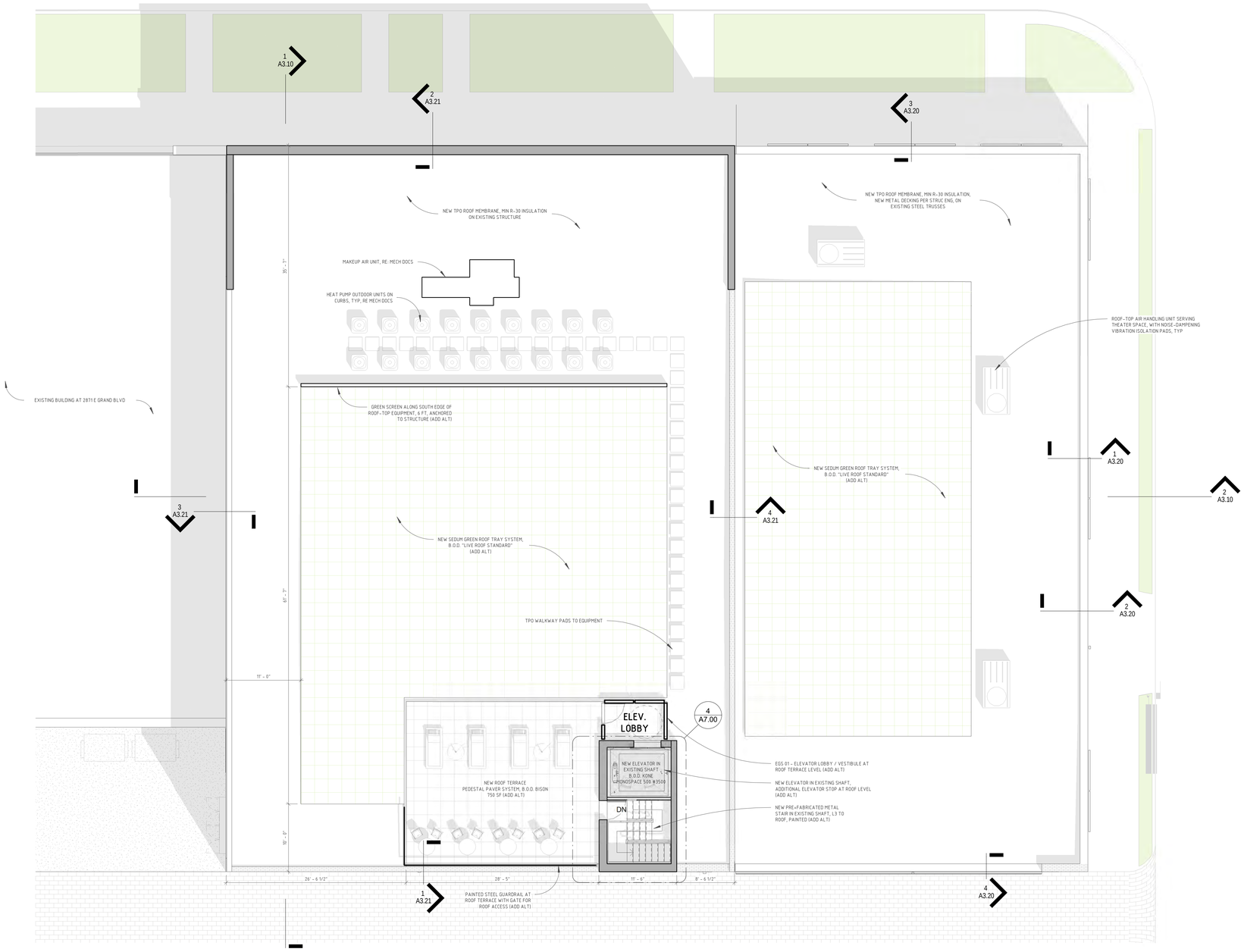
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LEVEL 3 - FLOOR PLAN

A2.03

SCALE : AS INDICATED 8/2/2019 8:06:05 PM



1 E GRAND ROOF
Scale: 1/8" = 1'-0"

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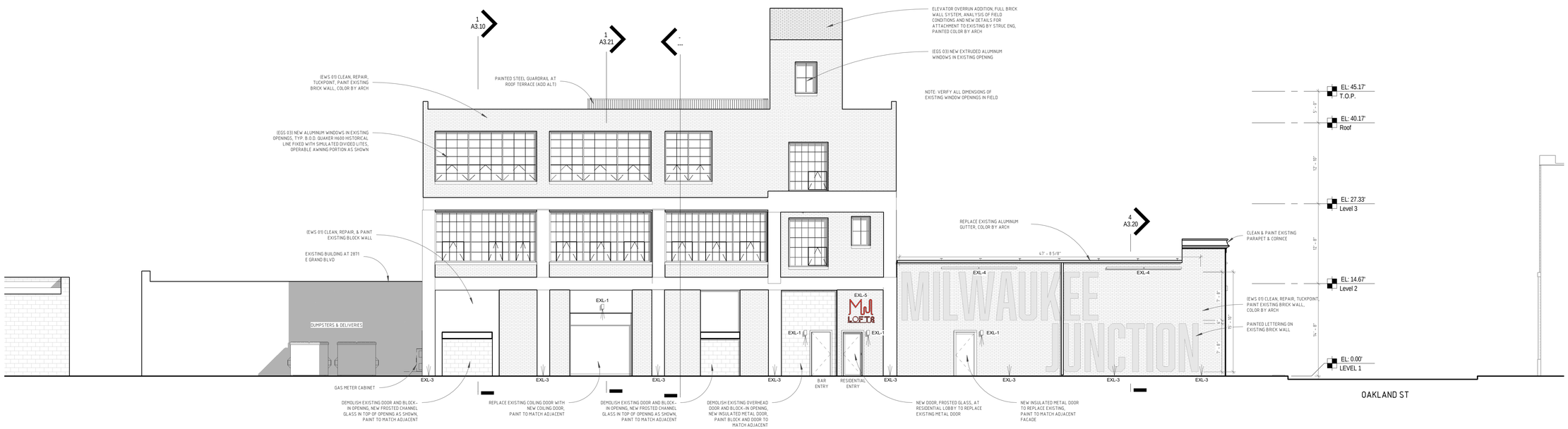
ROOF PLAN

A2.04

SCALE : AS INDICATED 8/2/2019 8:07:01 PM

EXTERIOR LIGHT FIXTURES:

EXL-1 1-WAY WALL MOUNTED SCONCE, LED, B.O.D. BEGA SURFACE WALL RECTANGULAR
EXL-2 2-WAY WALL MOUNTED SCONCE, LED, B.O.D. BEGA SURFACE WALL RECTANGULAR
EXL-3 FLUSH MOUNT RECESSED UP LIGHT AT SIDEWALK & ALLEY, LED, B.O.D. BKSSL
EXL-4 WALL MOUNTED LINEAR WALL GRAZER, LED, B.O.D. XOOLIGHT
EXL-5 NEON SIGNAGE



2 SOUTH ELEVATION
Scale: 1/8" = 1'-0"



1 NORTH ELEVATION
Scale: 1/8" = 1'-0"

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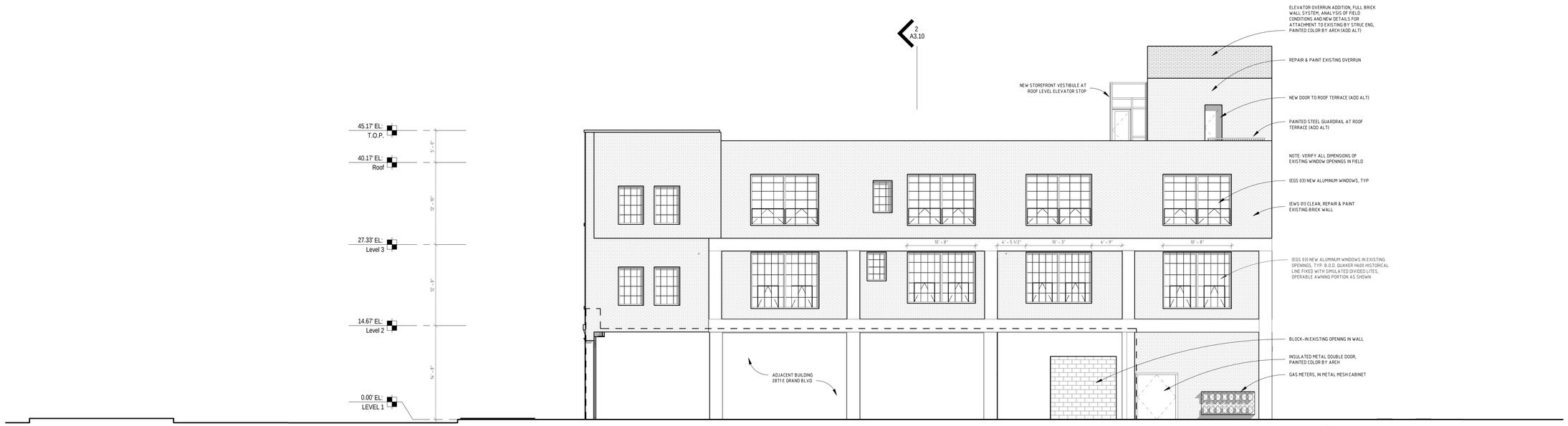
EXTERIOR ELEVATIONS

A3.01

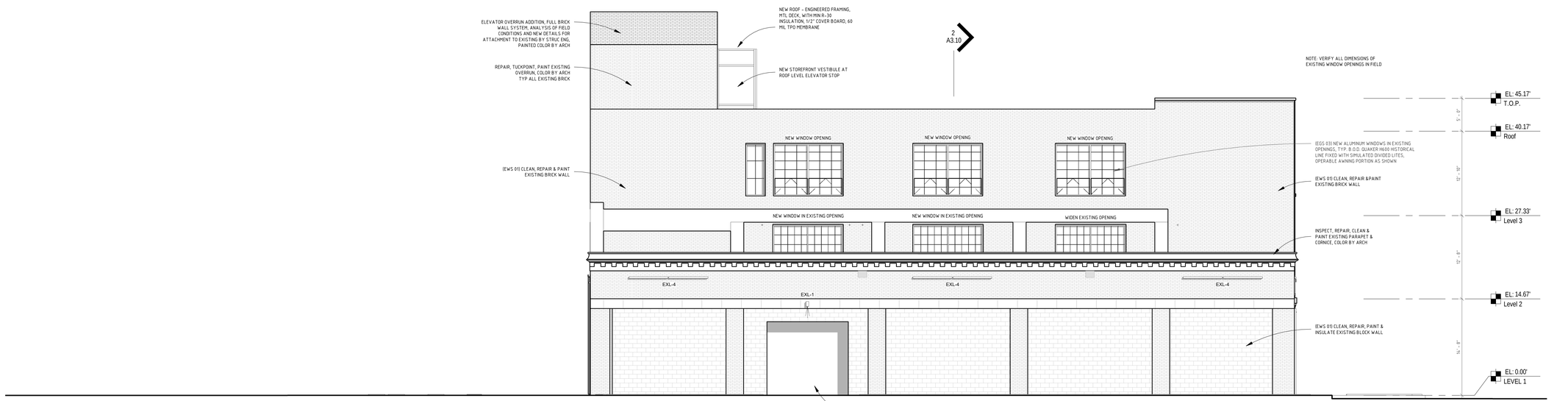
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EXTERIOR LIGHT FIXTURES:

EXL-1 1-WAY WALL MOUNTED SCONCE, LED, B.O.D. BEGA SURFACE WALL RECTANGULAR
EXL-2 2-WAY WALL MOUNTED SCONCE, LED, B.O.D. BEGA SURFACE WALL RECTANGULAR
EXL-3 FLUSH MOUNT RECESSED UP LIGHT AT SIDEWALK & ALLEY, LED, B.O.D. BKSSL
EXL-4 WALL MOUNTED LINEAR WALL GRAZER, LED, B.O.D. XOOLIGHT
EXL-5 NEON SIGNAGE



2 WEST ELEVATION
Scale: 1/8" = 1'-0"



1 EAST ELEVATION
Scale: 1/8" = 1'-0"

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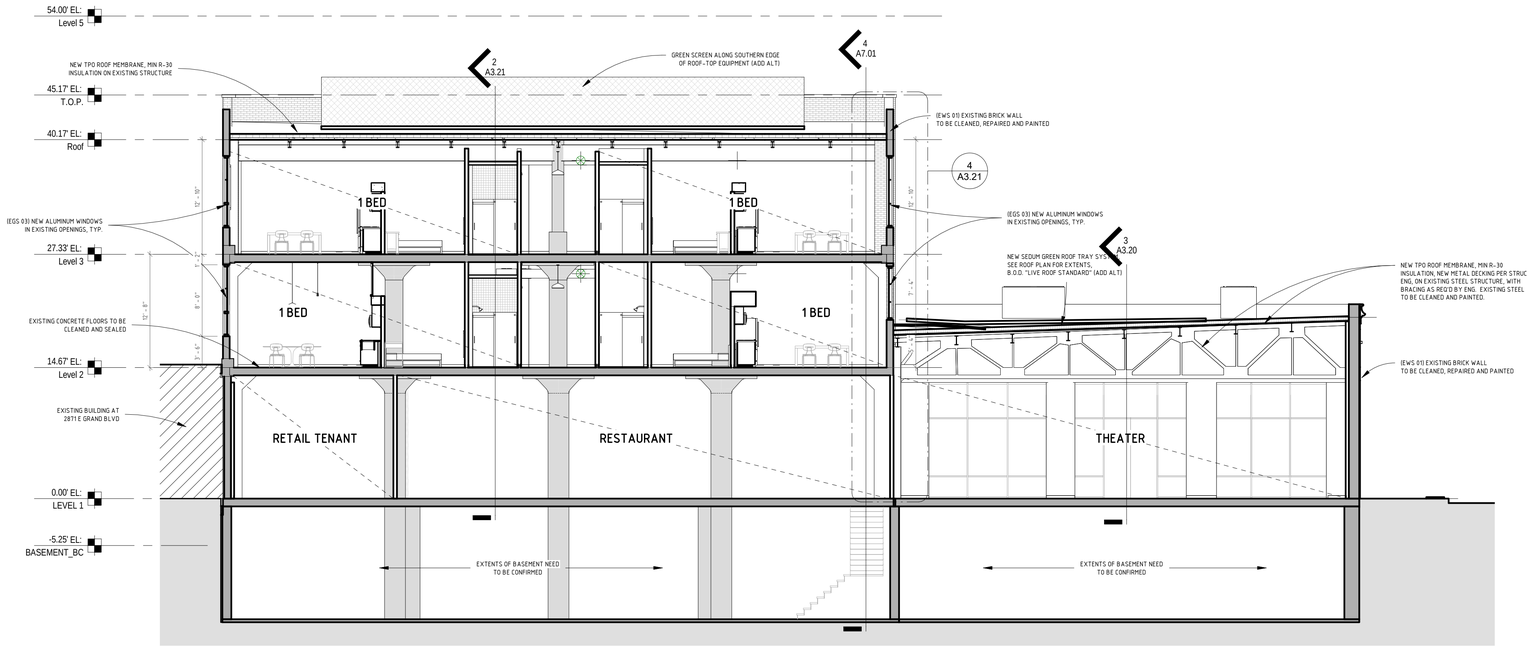
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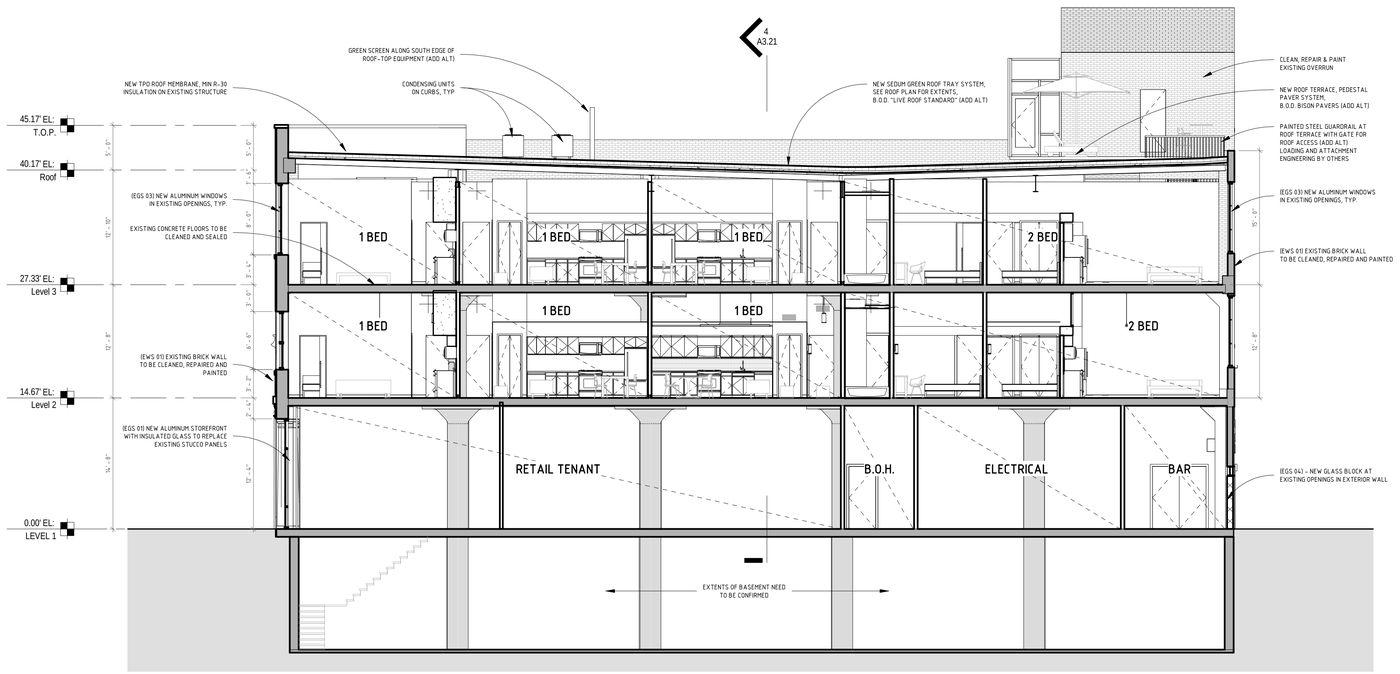
EXTERIOR ELEVATIONS

A3.02

SCALE : AS INDICATED 8/26/2019 6:51:41 PM



2 SECTION_2857-2863 WEST-EAST
Scale: 1/8" = 1'-0"



1 SECTION_2863 NORTH-SOUTH
Scale: 1/8" = 1'-0"

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2857; 2863
EAST GRAND BLVD
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BUILDING SECTIONS

A3.10

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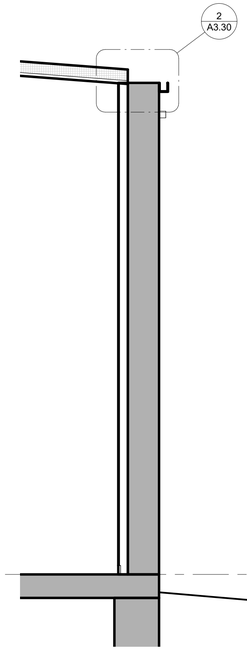
2857; 2863
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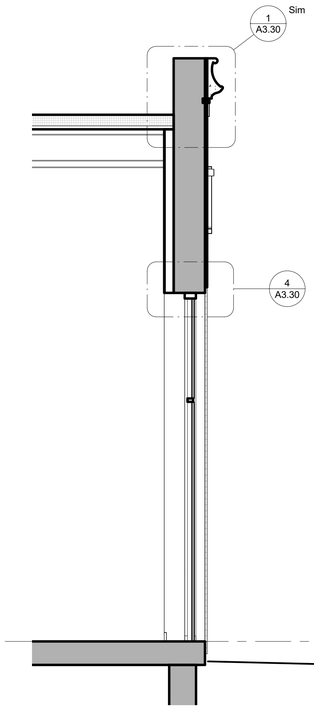
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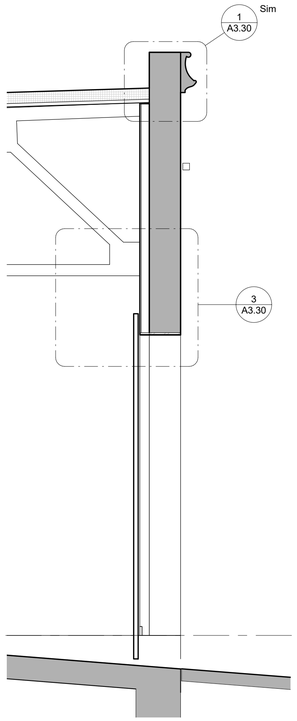
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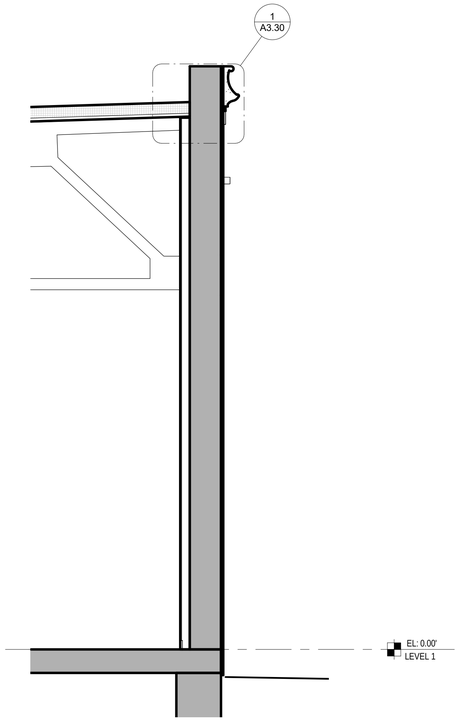
4 2857_SOUTH WALL SECTION
Scale: 3/8" = 1'-0"



3 2857_NORTH WALL SECTION
Scale: 3/8" = 1'-0"



2 2857_EAST WALL SECTION AT DOOR
Scale: 3/8" = 1'-0"



1 2857_EAST WALL SECTION
Scale: 3/8" = 1'-0"

OOMBRA ARCHITECTS

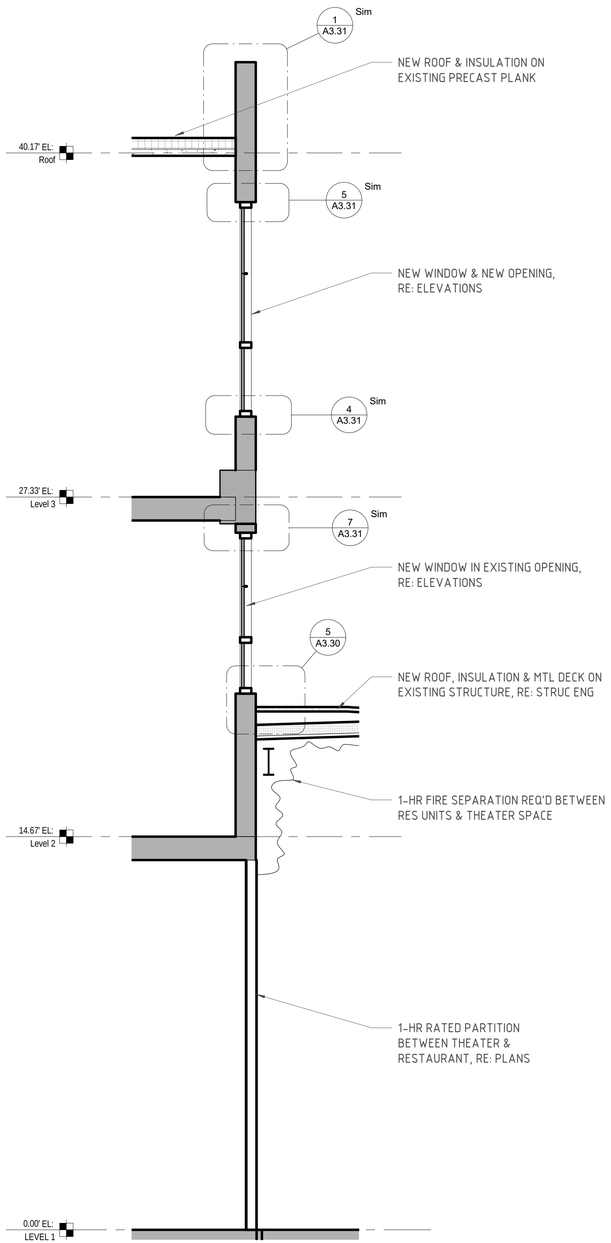
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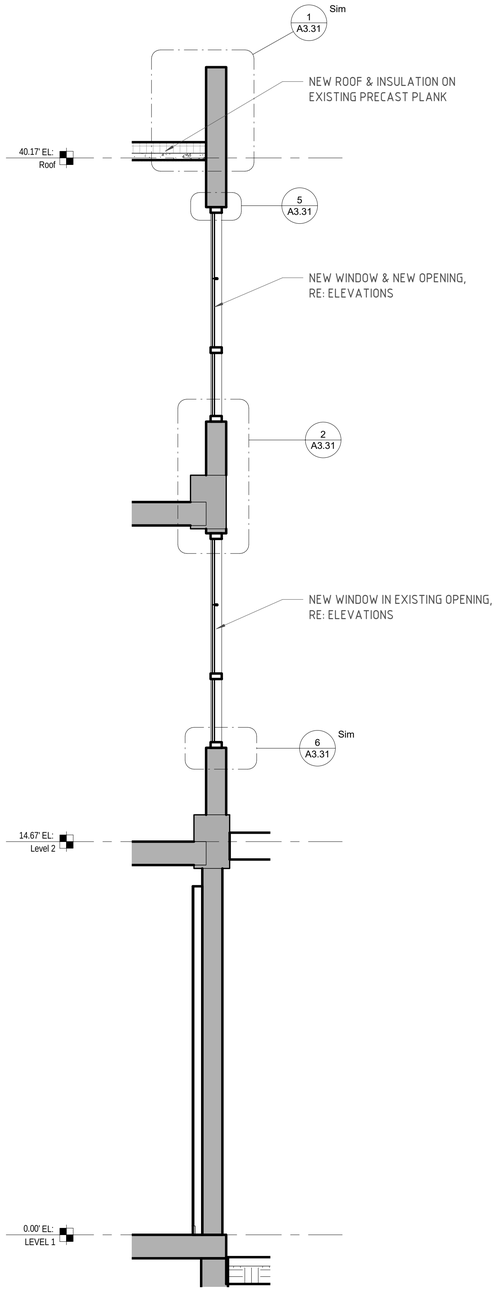
WALL SECTIONS

A3.20

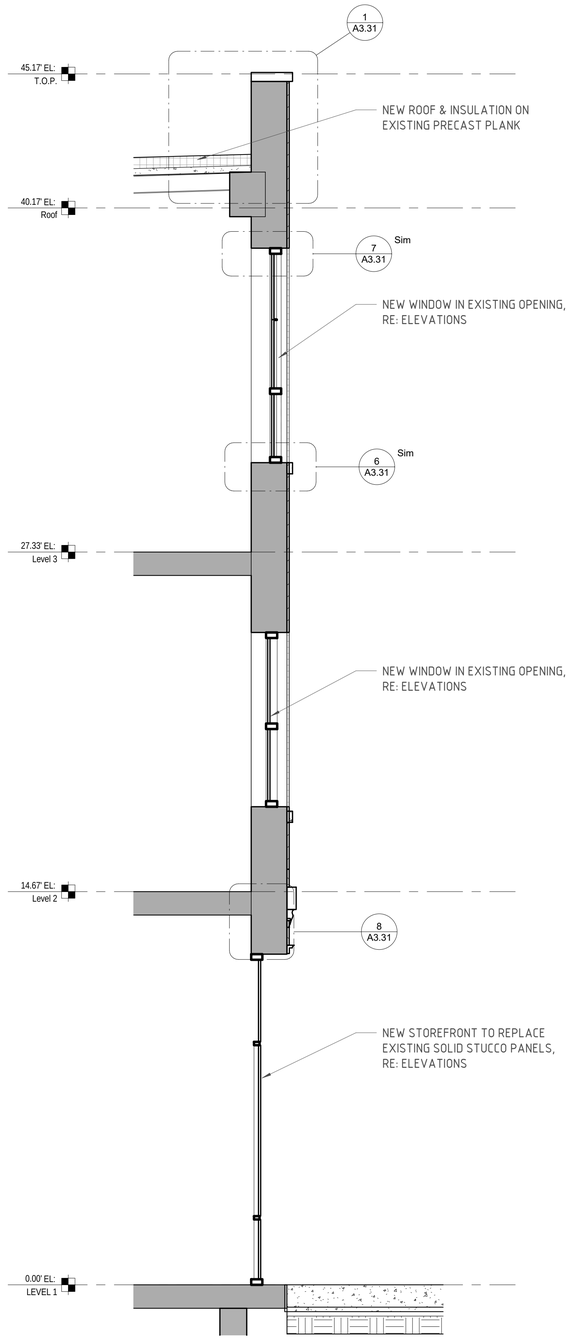
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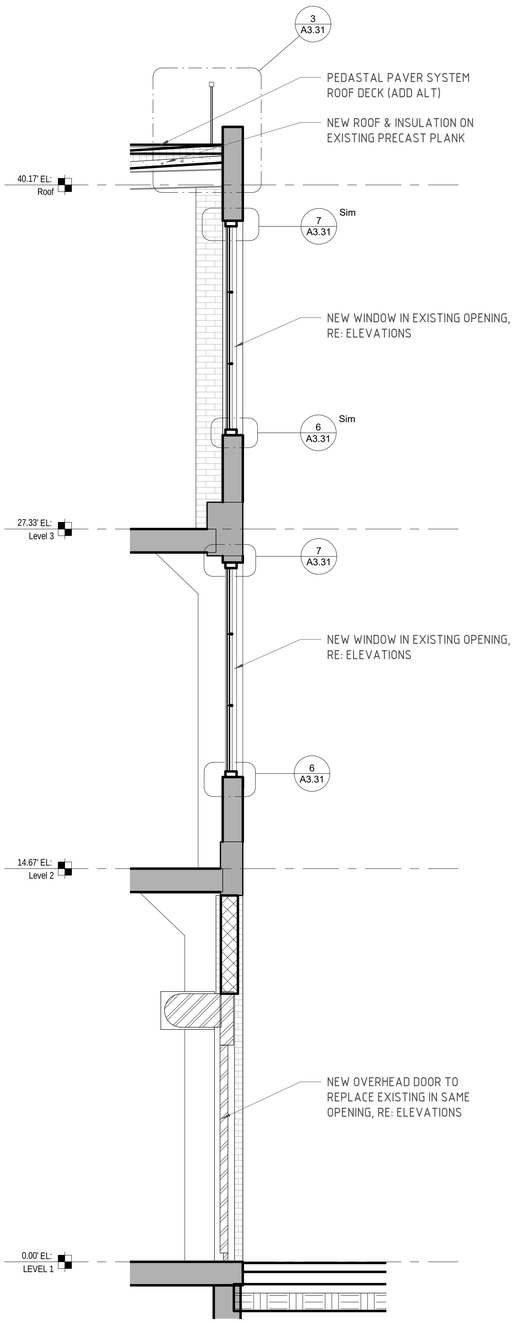
4 2863_EAST WALL SECTION
Scale: 3/8" = 1'-0"



3 2863_WEST WALL SECTION
Scale: 3/8" = 1'-0"



2 2863_NORTH WALL SECTION
Scale: 3/8" = 1'-0"



1 2863_SOUTH WALL SECTION
Scale: 3/8" = 1'-0"

1014
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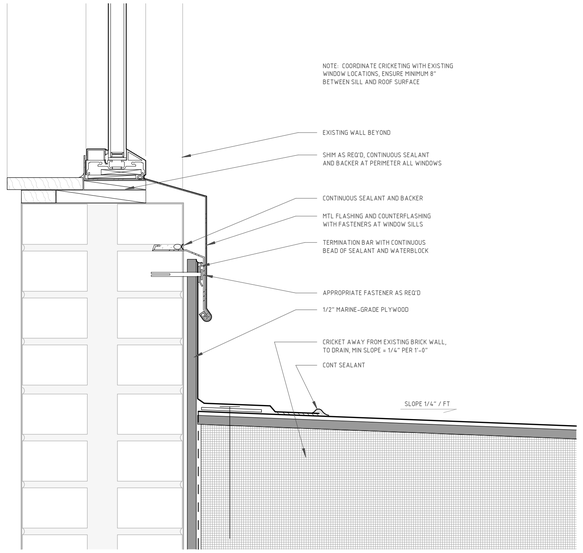
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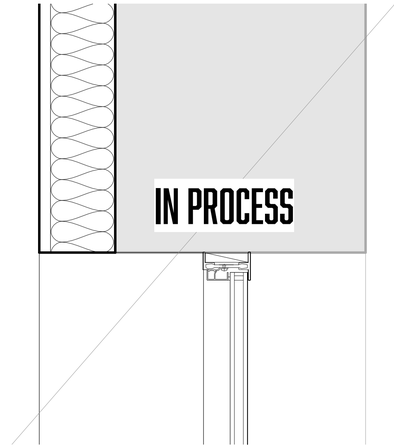
WALL SECTIONS

A3.21

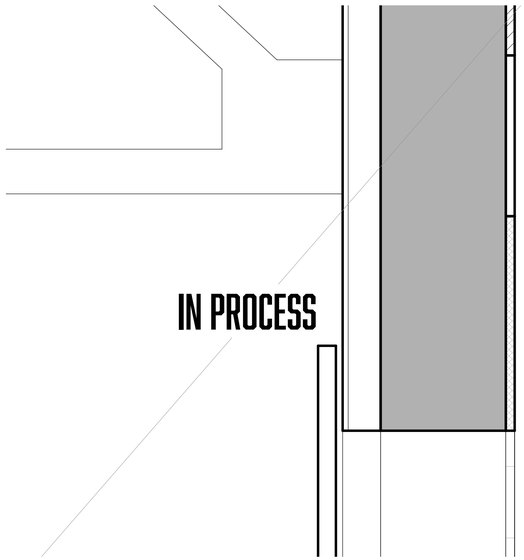
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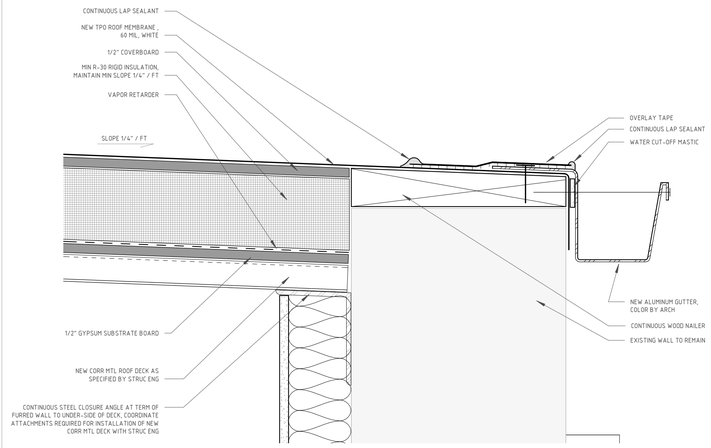
5 2857 ROOF AT WEST WALL
Scale: 3" = 1'-0"



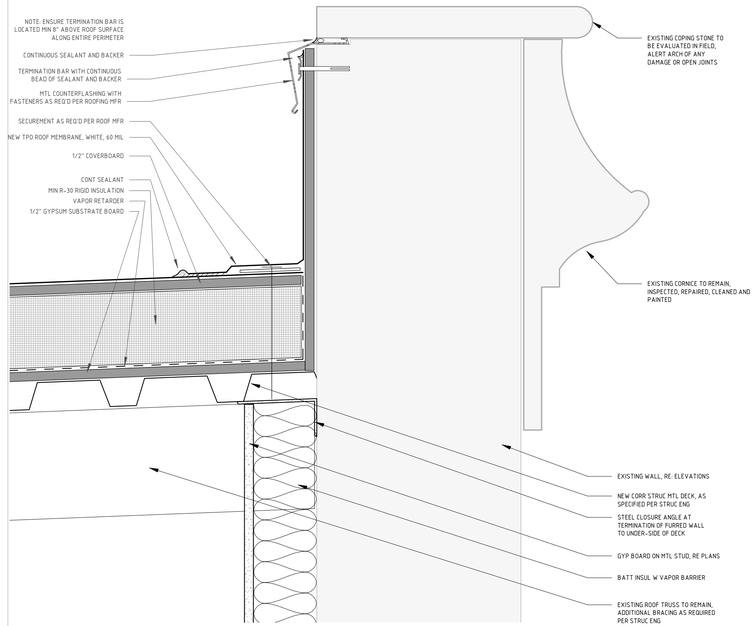
4 2857 STOREFRONT HEAD
Scale: 3" = 1'-0"



3 2857 COILING DOOR
Scale: 1 1/2" = 1'-0"



2 2857 GUTTER
Scale: 3" = 1'-0"



1 2857 EAST WALL PARAPET
Scale: 3" = 1'-0"

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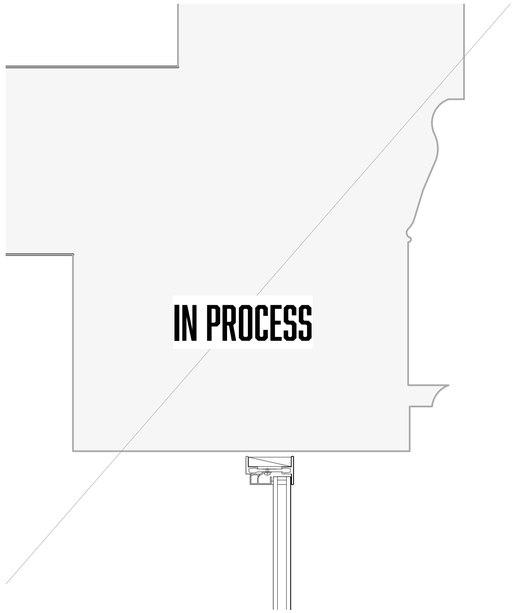
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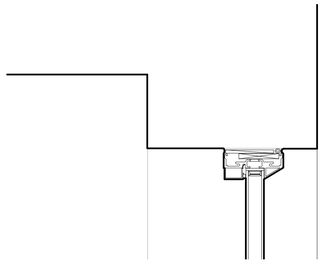
EXTERIOR SECTION DETAILS

A3.30

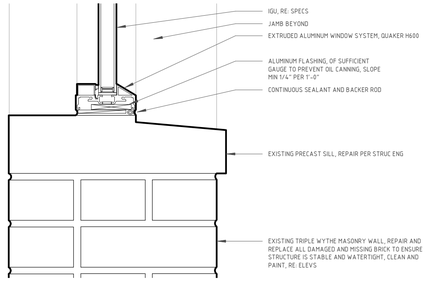
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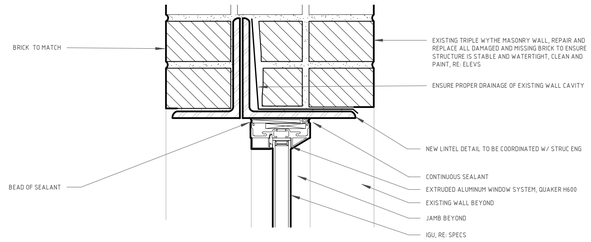
8 2863_STOREFRONT HEAD
Scale: 3" = 1'-0"



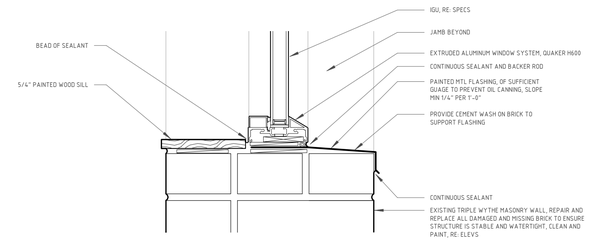
7 WINDOW HEAD AT EXISTING OPENING
Scale: 3" = 1'-0"



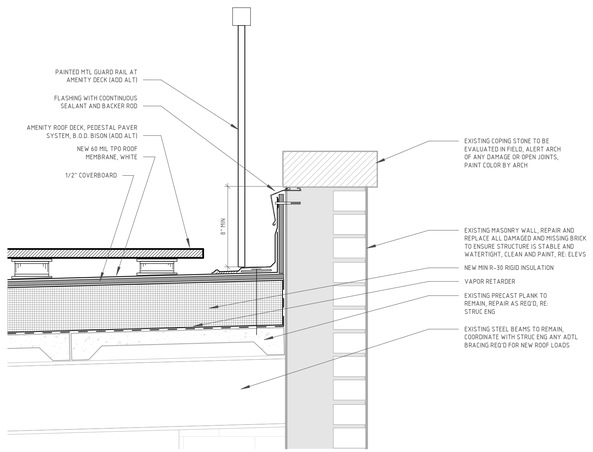
6 WINDOW SILL AT EXISTING OPENING
Scale: 3" = 1'-0"



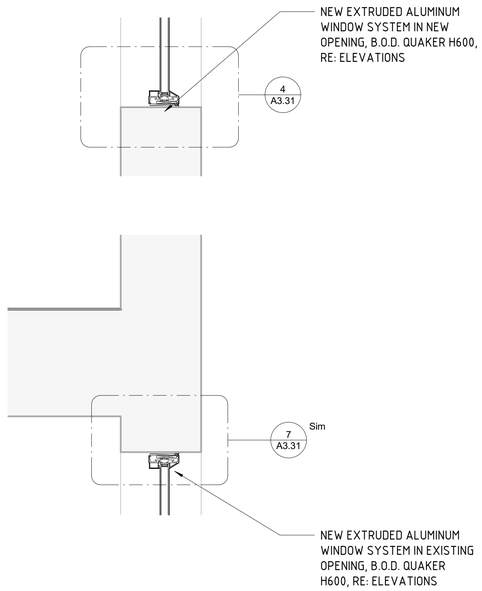
5 WINDOW HEAD AT NEW OPENING
Scale: 3" = 1'-0"



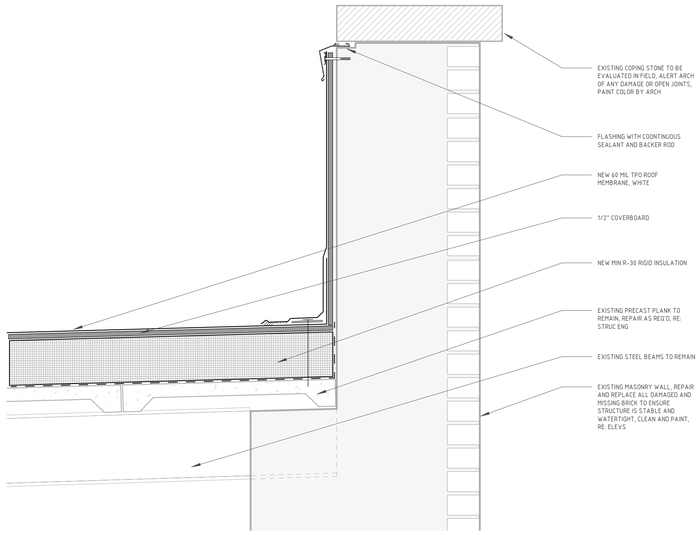
4 WINDOW SILL AT NEW OPENING
Scale: 3" = 1'-0"



3 PARAPET AT ROOF DECK
Scale: 1 1/2" = 1'-0"



2 DETAIL_2863 WEST WALL LEVEL 3
Scale: 1 1/2" = 1'-0"



1 DETAIL_2863 TYP PARAPET AND NEW ROOF
Scale: 1 1/2" = 1'-0"

1014 OOMBRA PROJECT

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

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METHOD DEVELOPMENT
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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

EXTERIOR SECTION DETAILS

A3.31

SCALE : AS INDICATED 8/2/2019 8:08:29 PM

FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
F-PT2	GENERAL PAINT UNIT "ACCENT" WALL COLOR, SHERWIN WILLIAMS: SW 7019 "GAUNTLET GRAY" EGGSHELL FINISH ON WALLS, RE: INTERIOR ELEVATIONS & SPECS. SEMI-GLOSS ON DOOR FRAMES.
F-SS1	SOLID SURFACE COUNTERTOP, UNIT KITCHEN AND LIVINGROOM, DALTILE: NATURE FLECKS "LUMINESCE NQ75", RE: MILLWORK DETIALS.
F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
F-KB1	BACKSPLASH AT KITCHEN COUNTER, UNITS KITCHENS, CERAMIC TILE 1X6 COLOR BY ARCH
F-B1	EXISTING STRUCTURAL MEMBER, UNITS LIVING ROOMS AND BEDROOMS, CLEANED AND UNPAINTED
F-E1	EXISTING MASONRY WALLS TO BE CLEANED AND REGROUTED AS NECESSARY, UNPAINTED
NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

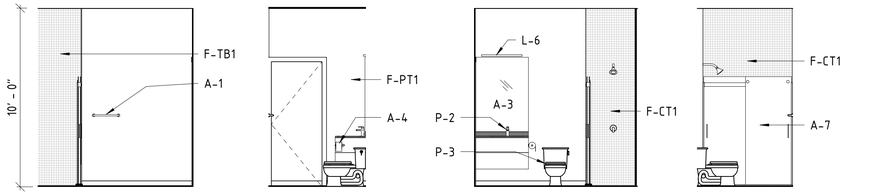
LIGHT FIXTURES:

L-1	SURFACE MOUNTED LED DOWNLIGHTS, 4" CLOSET, BATHROOM, B.O.D. PHILIPS LEDINAIRE DOWNLIGHT DN029B
L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
L-2b	SURFACE MOUNTED LED WALL LIGHT, B.O.D EUREKA SCOUT 3049 10" BLKE
L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
L-4	LED STRIP COVE LIGHTING UNDER KITCHEN CABINETS
L-5	SURFACE MOUNTED SQ. LED DOWNLIGHTS WITH EXHAUST, 4"X4" BATHROOM, B.O.D. DELTA MODEL SIG80-110LED
L-6	SURFACE MOUNTED, VANITY LIGHTING ABOVE BATHROOM MIRROR, EUREKA 24" STROKE 3542
L-7	PENDANT LIGHT, LIVING ROOM OVER DINING TABLE, B.O.D EUREKA BLOOM 4269

PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

BATHROOM



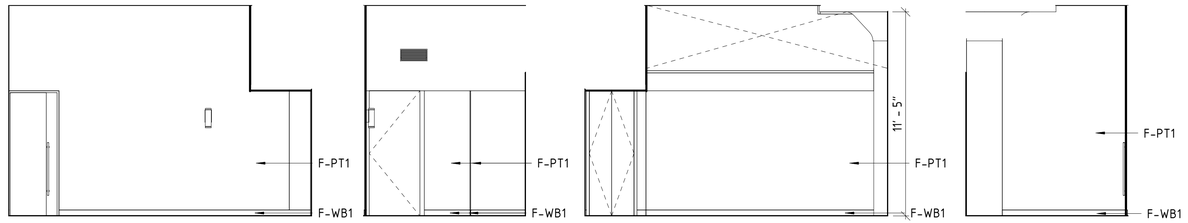
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4 Int. Elev. Scale: 1/4" = 1'-0"

5 Int. Elev. Scale: 1/4" = 1'-0"

6 Int. Elev. Scale: 1/4" = 1'-0"

BEDROOM



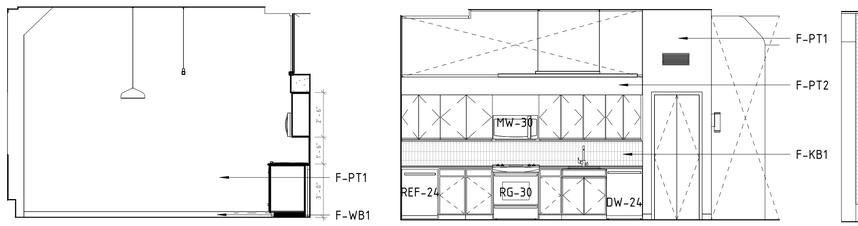
7 Int. Elev. Scale: 1/4" = 1'-0"

8 Int. Elev. Scale: 1/4" = 1'-0"

9 Int. Elev. Scale: 1/4" = 1'-0"

10 Int. Elev. Scale: 1/4" = 1'-0"

LIVING ROOM

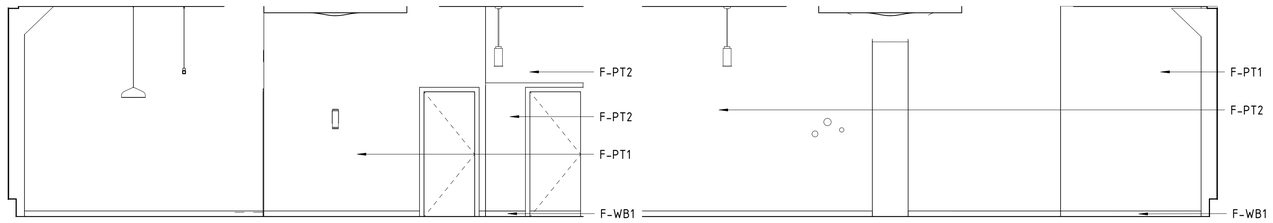


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12 Int. Elev. Scale: 1/4" = 1'-0"

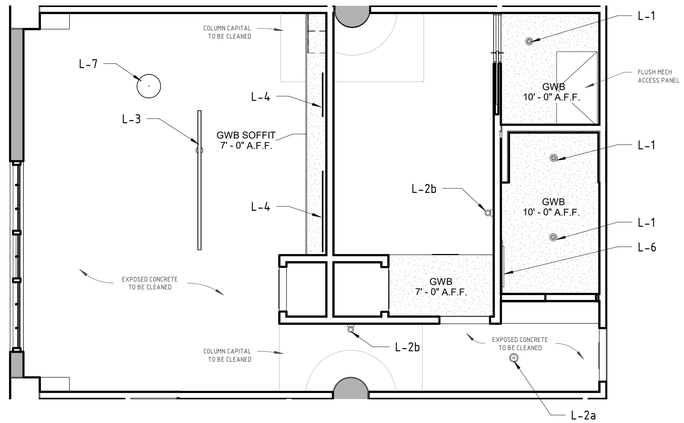
13 Int. Elev. Scale: 1/4" = 1'-0"

HALLWAY

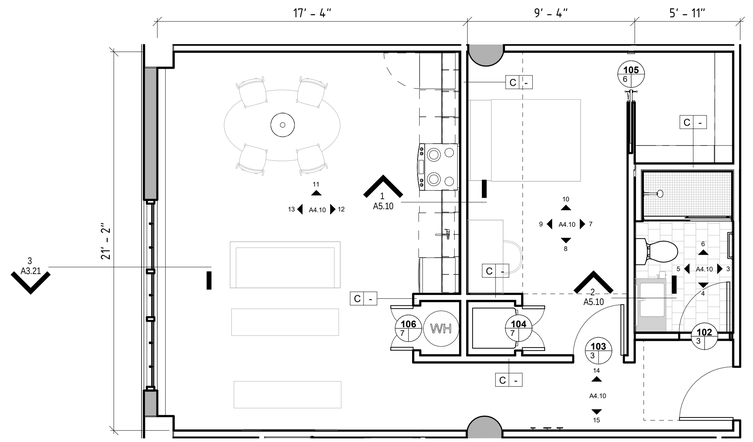


14 Int. Elev. Scale: 1/4" = 1'-0"

15 Int. Elev. Scale: 1/4" = 1'-0"



2 UNIT 1 - RCP Scale: 1/4" = 1'-0"



1 UNIT 1 - FLOOR PLAN Scale: 1/4" = 1'-0"

1014

OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

1 BEDROOM UNIT

A4.10

SCALE : AS INDICATED 8/2/2019 8:10:20 PM

FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
F-PT2	GENERAL PAINT UNIT "ACCENT" WALL COLOR, SHERWIN WILLIAMS: SW 7019 "GAUNTLET GRAY" EGGSHELL FINISH ON WALLS, RE: INTERIOR ELEVATIONS & SPECS. SEMI-GLOSS ON DOOR FRAMES.
F-SS1	SOLID SURFACE COUNTERTOP, UNIT KITCHEN AND LIVINGROOM, DALTILE: NATURE FLECKS "LUMINESCE NQ75", RE: MILLWORK DETIALS.
F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
F-KB1	BACKSPLASH AT KITCHEN COUNTER, UNITS KITCHENS, CERAMIC TILE 1X6 COLOR BY ARCH
F-B1	EXISTING STRUCTURAL MEMBER, UNITS LIVING ROOMS AND BEDROOMS, CLEANED AND UNPAINTED
F-E1	EXISTING MASONRY WALLS TO BE CLEANED AND REGROUTED AS NECESSARY, UNPAINTED
NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

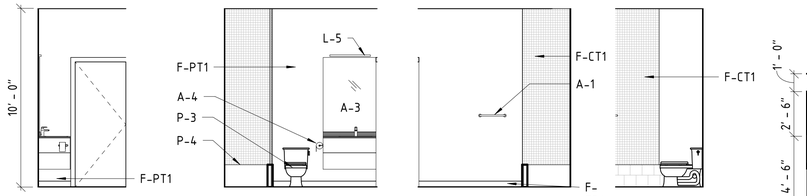
PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

LIGHT FIXTURES:

L-1	SURFACE MOUNTED LED DOWNLIGHTS, 4" CLOSET, BATHROOM, B.O.D. PHILIPS LEDINAIRE DOWNLIGHT DN029B
L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
L-2b	SURFACE MOUNTED LED WALL LIGHT, B.O.D EUREKA SCOUT 3049 10" BLKE
L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
L-4	LED STRIP COVE LIGHTING UNDER KITCHEN CABINETS
L-5	SURFACE MOUNTED SQ. LED DOWNLIGHTS WITH EXHAUST, 4"X4" BATHROOM, B.O.D. DELTA MODEL SIG80-110LED
L-6	SURFACE MOUNTED, VANITY LIGHTING ABOVE BATHROOM MIRROR, EUREKA 24" STROKE 3542
L-7	PENDANT LIGHT, LIVING ROOM OVER DINING TABLE, B.O.D EUREKA BLOOM 4269

BATHROOM



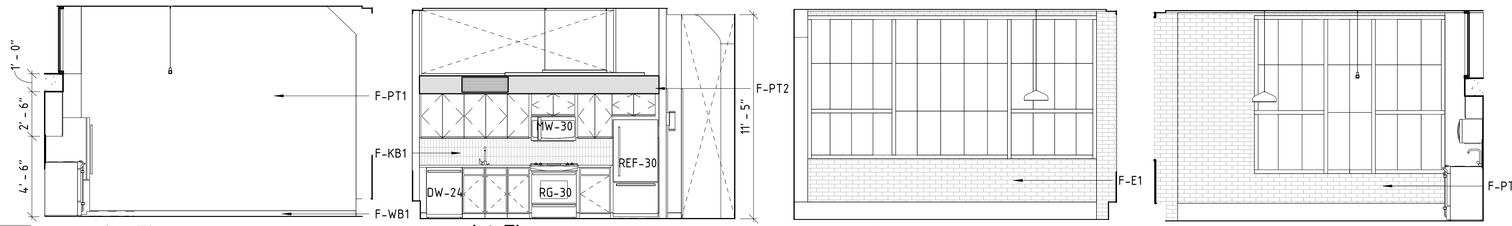
3 Int. Elev. Scale: 1/4" = 1'-0"

4 Int. Elev. Scale: 1/4" = 1'-0"

5 Int. Elev. Scale: 1/4" = 1'-0"

6 Int. Elev. Scale: 1/4" = 1'-0"

LIVING ROOM



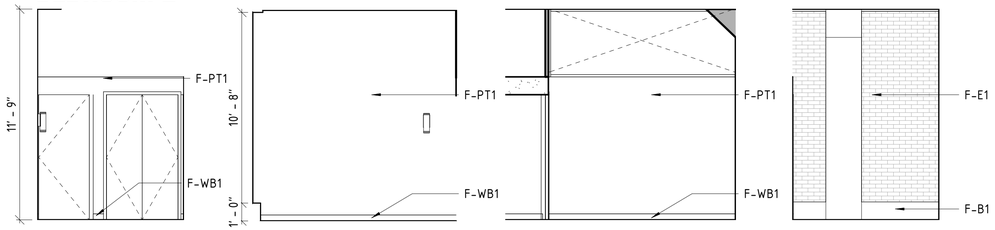
19 Int. Elev. Scale: 1/4" = 1'-0"

20 Int. Elev. Scale: 1/4" = 1'-0"

21 Int. Elev. Scale: 1/4" = 1'-0"

22 Int. Elev. Scale: 1/4" = 1'-0"

BEDROOM 2



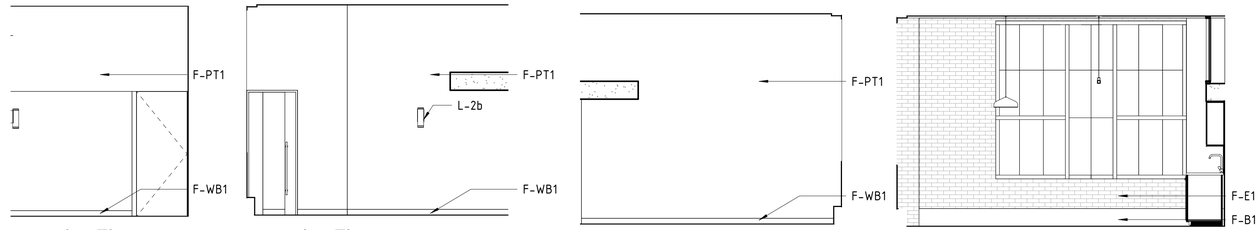
11 Int. Elev. Scale: 1/4" = 1'-0"

12 Int. Elev. Scale: 1/4" = 1'-0"

13 Int. Elev. Scale: 1/4" = 1'-0"

14 Int. Elev. Scale: 1/4" = 1'-0"

BEDROOM 1



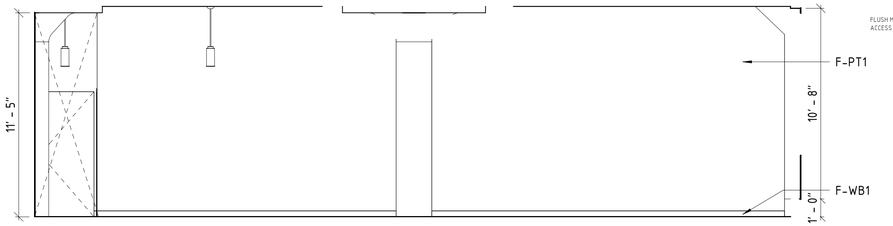
7 Int. Elev. Scale: 1/4" = 1'-0"

8 Int. Elev. Scale: 1/4" = 1'-0"

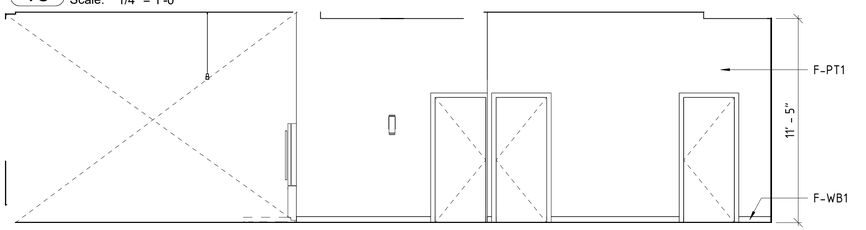
9 Int. Elev. Scale: 1/4" = 1'-0"

10 Int. Elev. Scale: 1/4" = 1'-0"

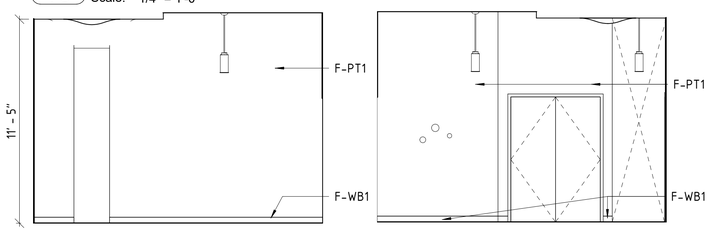
HALLWAY



15 Int. Elev. Scale: 1/4" = 1'-0"

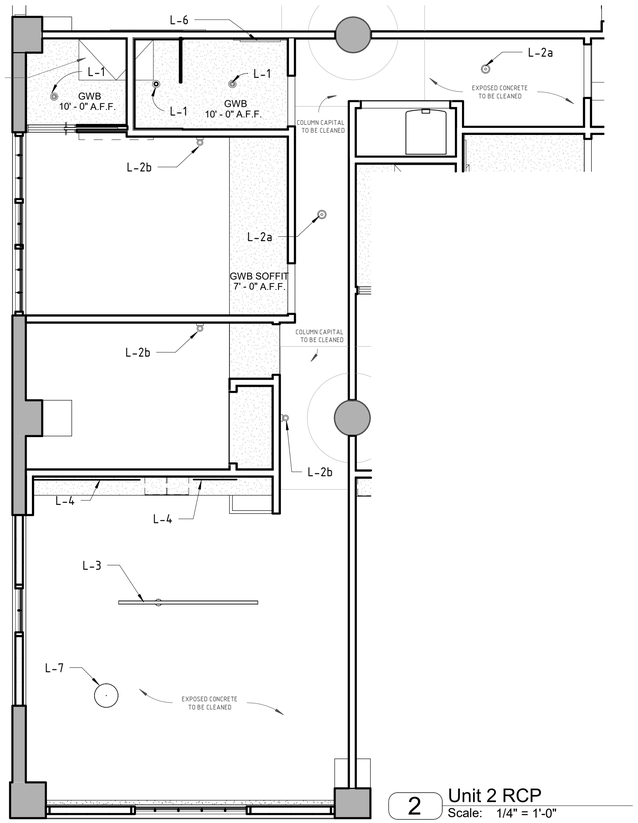


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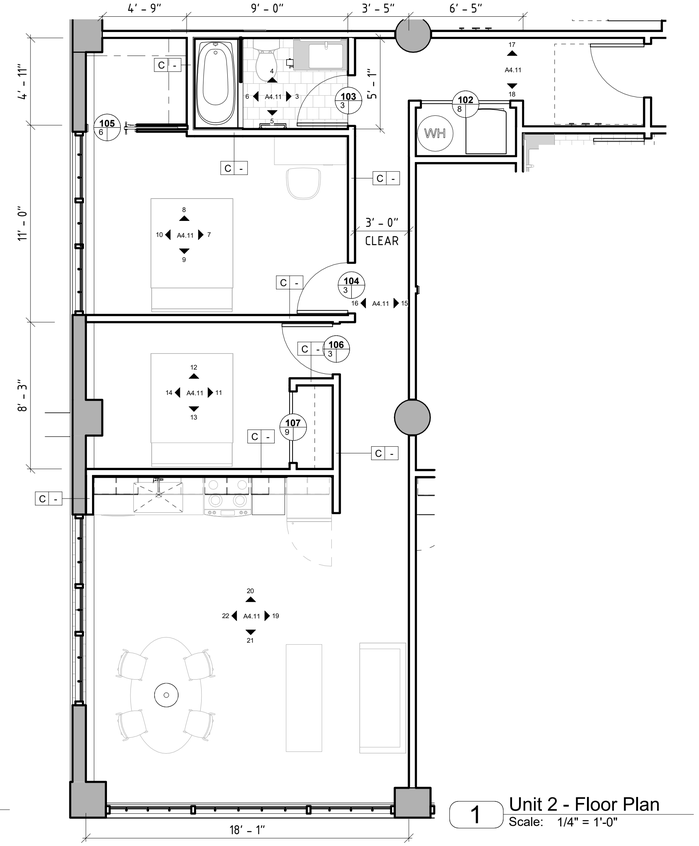


17 Int. Elev. Scale: 1/4" = 1'-0"

18 Int. Elev. Scale: 1/4" = 1'-0"



2 Unit 2 RCP Scale: 1/4" = 1'-0"



1 Unit 2 - Floor Plan Scale: 1/4" = 1'-0"

1014 OOMBRA PROJECT

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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

2 BEDROOM UNIT

A4.11

SCALE : AS INDICATED

8/2/2019 8:10:25 PM

FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
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F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
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NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

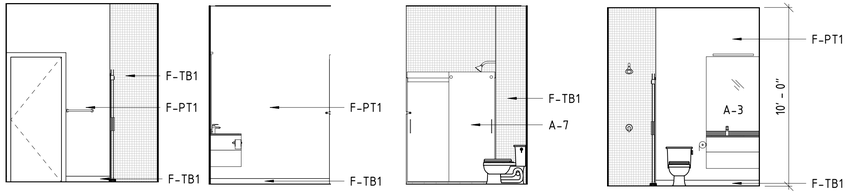
LIGHT FIXTURES:

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L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
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L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
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PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

BATHROOM



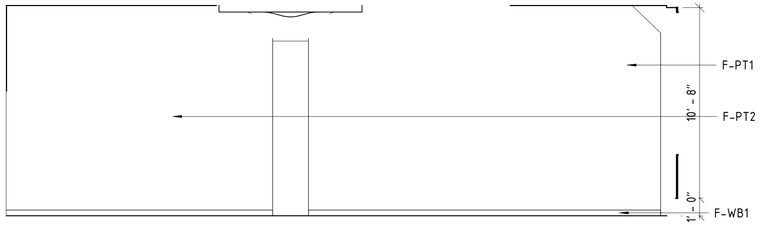
3 Int. Elev. Scale: 1/4" = 1'-0"

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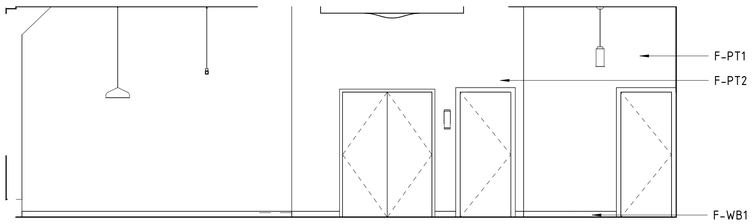
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6 Int. Elev. Scale: 1/4" = 1'-0"

HALLWAY

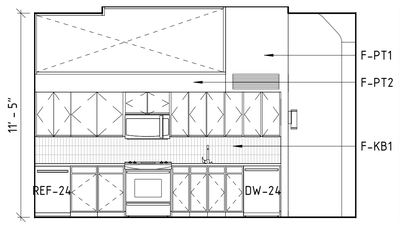


11 Int. Elev. Scale: 1/4" = 1'-0"

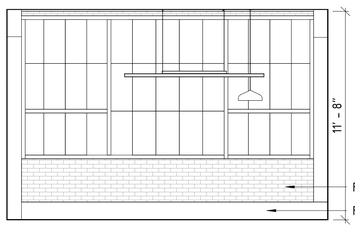


12 Int. Elev. Scale: 1/4" = 1'-0"

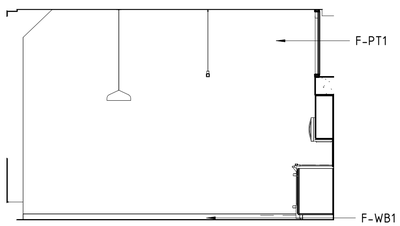
LIVING ROOM



13 Int. Elev. Scale: 1/4" = 1'-0"

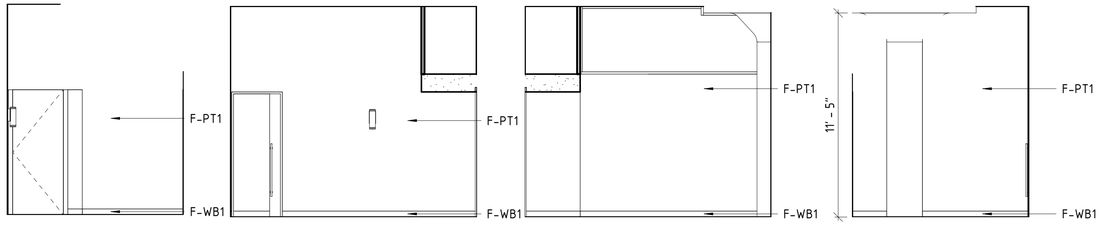


14 Int. Elev. Scale: 1/4" = 1'-0"



15 Int. Elev. Scale: 1/4" = 1'-0"

BEDROOM

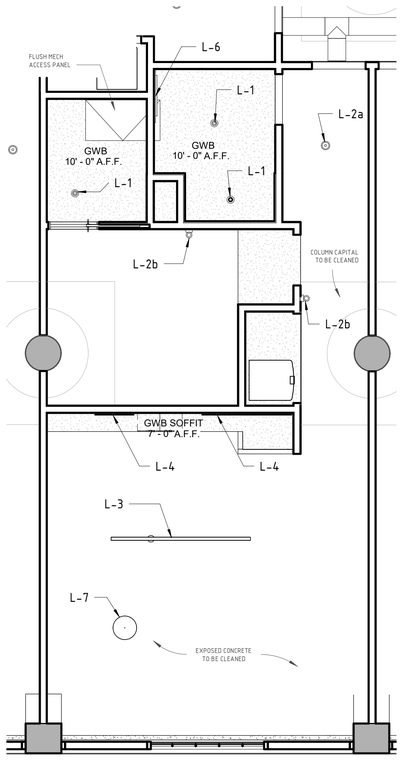


7 Int. Elev. Scale: 1/4" = 1'-0"

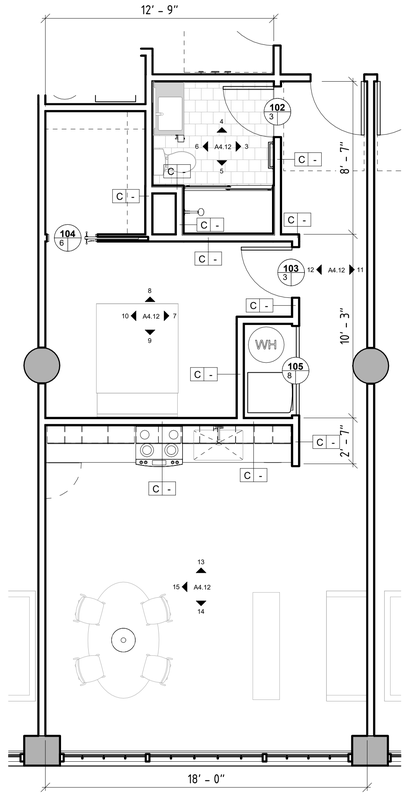
8 Int. Elev. Scale: 1/4" = 1'-0"

9 Int. Elev. Scale: 1/4" = 1'-0"

10 Int. Elev. Scale: 1/4" = 1'-0"



2 Unit 3 RCP Scale: 1/4" = 1'-0"



1 Unit 3 - Floor Plan Scale: 1/4" = 1'-0"

1014 OOMBRA PROJECT

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST, SUITE 700
DETROIT, MI 48226

ARCHITECT
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WWW.OOMBRA.COM
215.948.2564

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ETS ENGINEERING, INC.
P.O. BOX 1116 ROYAL OAK, MI 48068
418-1/2 S. WASHINGTON AVE. ROYAL OAK, MI 48067
215.948.2564

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248.247.1115

OOMBRA ARCHITECTS
OOMBRA ARCHITECTS, LLC.
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WWW.OOMBRA.COM
267.741.0007

DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

1 BEDROOM UNIT

A4.12

SCALE : AS INDICATED 8/2/2019 8:10:29 PM

FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
F-PT2	GENERAL PAINT UNIT "ACCENT" WALL COLOR, SHERWIN WILLIAMS: SW 7019 "GAUNTLET GRAY" EGGSHELL FINISH ON WALLS, RE: INTERIOR ELEVATIONS & SPECS. SEMI-GLOSS ON DOOR FRAMES.
F-SS1	SOLID SURFACE COUNTERTOP, UNIT KITCHEN AND LIVINGROOM, DALTILE: NATURE FLECKS "LUMINESCE NQ75", RE: MILLWORK DETIALS.
F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
F-KB1	BACKSPLASH AT KITCHEN COUNTER, UNITS KITCHENS, CERAMIC TILE 1X6 COLOR BY ARCH
F-B1	EXISTING STRUCTURAL MEMBER, UNITS LIVING ROOMS AND BEDROOMS, CLEANED AND UNPAINTED
F-E1	EXISTING MASONRY WALLS TO BE CLEANED AND REGROUTED AS NECESSARY, UNPAINTED
NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

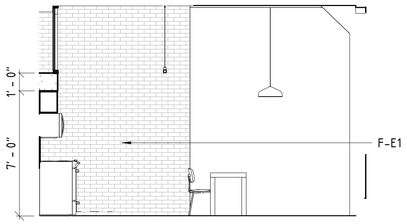
LIGHT FIXTURES:

L-1	SURFACE MOUNTED LED DOWNLIGHTS, 4" CLOSET, BATHROOM, B.O.D. PHILIPS LEDINAIRE DOWNLIGHT DN029B
L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
L-2b	SURFACE MOUNTED LED WALL LIGHT, B.O.D EUREKA SCOUT 3049 10" BLKE
L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
L-4	LED STRIP COVE LIGHTING UNDER KITCHEN CABINETS
L-5	SURFACE MOUNTED SQ. LED DOWNLIGHTS WITH EXHAUST, 4"X4" BATHROOM, B.O.D. DELTA MODEL SIG80-110LED
L-6	SURFACE MOUNTED, VANITY LIGHTING ABOVE BATHROOM MIRROR, EUREKA 24" STROKE 3542
L-7	PENDANT LIGHT, LIVING ROOM OVER DINING TABLE, B.O.D EUREKA BLOOM 4269

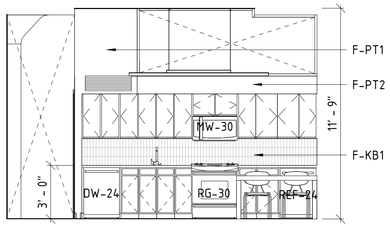
PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

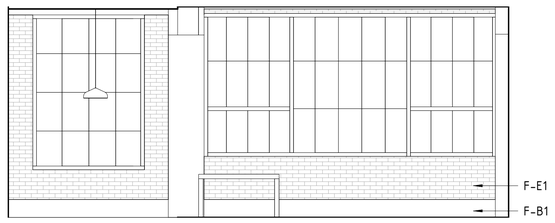
LIVING ROOM



9 Int. Elev.
Scale: 1/4" = 1'-0"

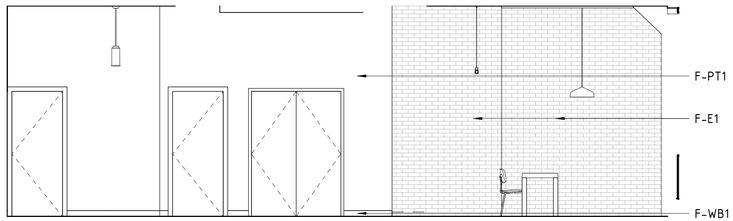


10 Int. Elev.
Scale: 1/4" = 1'-0"

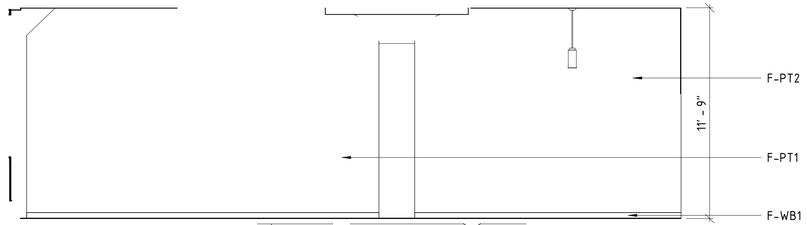


11 Int. Elev.
Scale: 1/4" = 1'-0"

HALLWAY

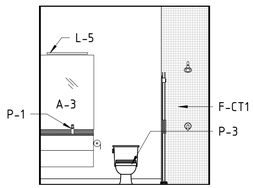


7 Int. Elev.
Scale: 1/4" = 1'-0"

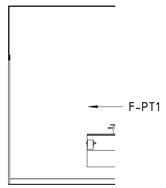


8 Int. Elev.
Scale: 1/4" = 1'-0"

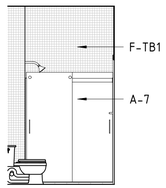
BATHROOM



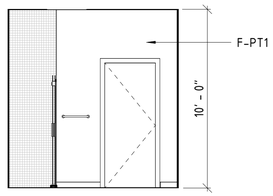
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Scale: 1/4" = 1'-0"



4 Int. Elev.
Scale: 1/4" = 1'-0"

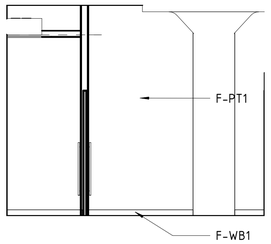


5 Int. Elev.
Scale: 1/4" = 1'-0"

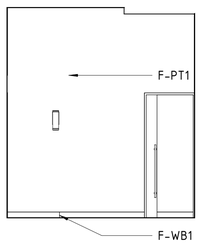


6 Int. Elev.
Scale: 1/4" = 1'-0"

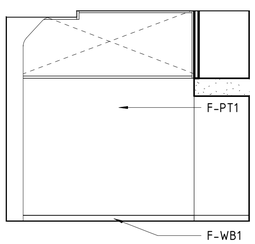
BEDROOM



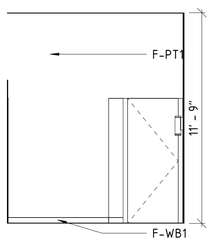
12 Int. Elev.
Scale: 1/4" = 1'-0"



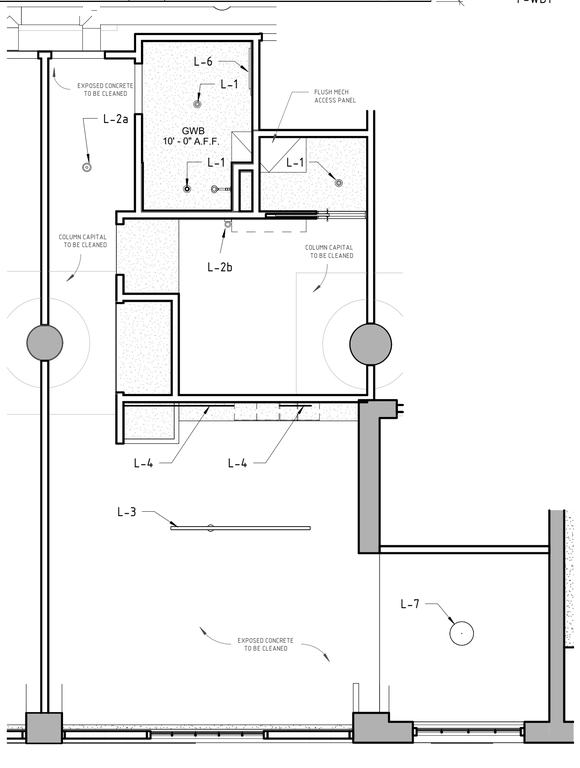
13 Int. Elev.
Scale: 1/4" = 1'-0"



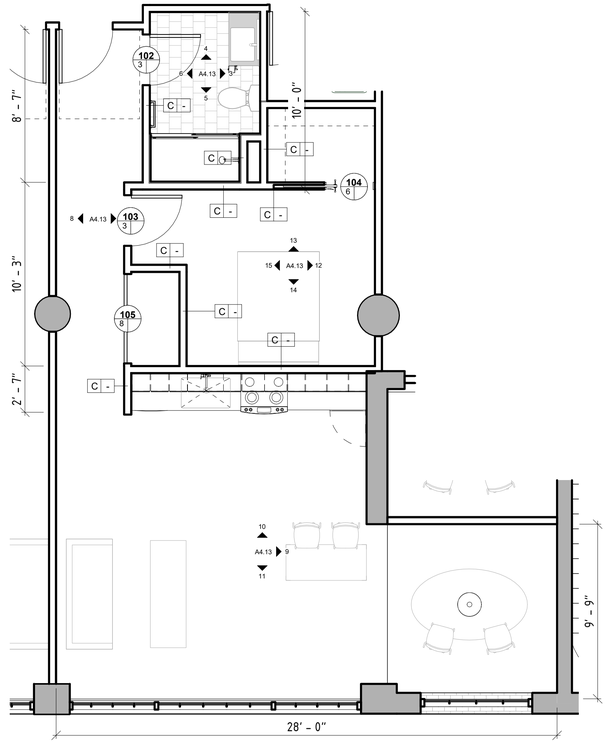
14 Int. Elev.
Scale: 1/4" = 1'-0"



15 Int. Elev.
Scale: 1/4" = 1'-0"



2 Unit 4 RCP
Scale: 1/4" = 1'-0"



1 Unit 4 - Floor Plan
Scale: 1/4" = 1'-0"

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST. SUITE 700
DETROIT, MI 48226

ARCHITECT
OOMBRA ARCHITECTS, LLC.
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215.948.2564

MEP ENGINEER
ETS ENGINEERING, INC.
P.O. BOX 1116 ROYAL OAK, MI 48068
418-1/2 S. WASHINGTON AVE. ROYAL OAK, MI 48067
215.948.2564

FOR REFERENCE, UNDER SEPARATE CONTRACT:
CIVIL ENGINEER
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607 SHELBY STREET, SUITE 200
Detroit, MI 48226
248.247.1115

OOMBRA ARCHITECTS
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267.741.0007

DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08.02.2019

1 BEDROOM UNIT

A4.13

SCALE : AS INDICATED

8/2/2019 8:10:33 PM

FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
F-PT2	GENERAL PAINT UNIT "ACCENT" WALL COLOR, SHERWIN WILLIAMS: SW 7019 "GAUNTLET GRAY" EGGSHELL FINISH ON WALLS, RE: INTERIOR ELEVATIONS & SPECS. SEMI-GLOSS ON DOOR FRAMES.
F-SS1	SOLID SURFACE COUNTERTOP, UNIT KITCHEN AND LIVINGROOM, DALTILE: NATURE FLECKS "LUMINESCE NQ75", RE: MILLWORK DETIALS.
F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
F-KB1	BACKSPLASH AT KITCHEN COUNTER, UNITS KITCHENS, CERAMIC TILE 1X6 COLOR BY ARCH
F-B1	EXISTING STRUCTURAL MEMBER, UNITS LIVING ROOMS AND BEDROOMS, CLEANED AND UNPAINTED
F-E1	EXISTING MASONRY WALLS TO BE CLEANED AND REGROUTED AS NECESSARY, UNPAINTED
NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

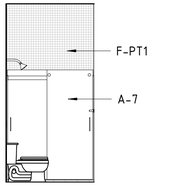
LIGHT FIXTURES:

L-1	SURFACE MOUNTED LED DOWNLIGHTS, 4" CLOSET, BATHROOM, B.O.D. PHILIPS LEDINAIRE DOWNLIGHT DN029B
L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
L-2b	SURFACE MOUNTED LED WALL LIGHT, B.O.D EUREKA SCOUT 3049 10" BLKE
L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
L-4	LED STRIP COVE LIGHTING UNDER KITCHEN CABINETS
L-5	SURFACE MOUNTED SQ. LED DOWNLIGHTS WITH EXHAUST, 4"X4" BATHROOM, B.O.D. DELTA MODEL SIG80-110LED
L-6	SURFACE MOUNTED, VANITY LIGHTING ABOVE BATHROOM MIRROR, EUREKA 24" STROKE 3542
L-7	PENDANT LIGHT, LIVING ROOM OVER DINING TABLE, B.O.D EUREKA BLOOM 4269

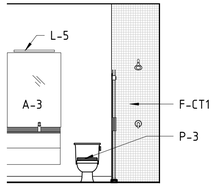
PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

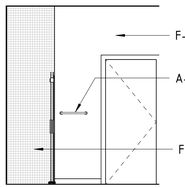
BATHROOM



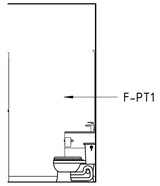
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4 Int. Elev. Scale: 1/4" = 1'-0"

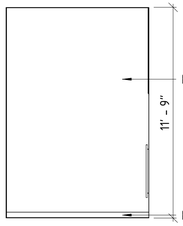


5 Int. Elev. Scale: 1/4" = 1'-0"

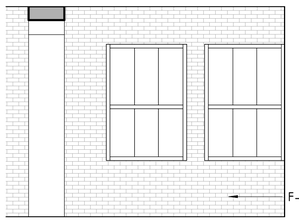


6 Int. Elev. Scale: 1/4" = 1'-0"

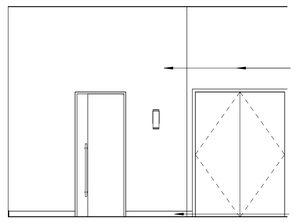
BEDROOM



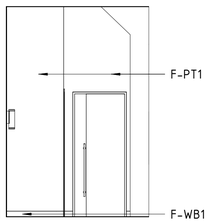
7 Int. Elev. Scale: 1/4" = 1'-0"



8 Int. Elev. Scale: 1/4" = 1'-0"

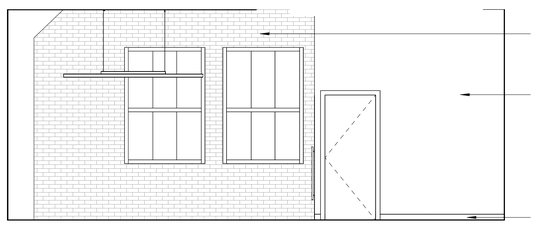


9 Int. Elev. Scale: 1/4" = 1'-0"

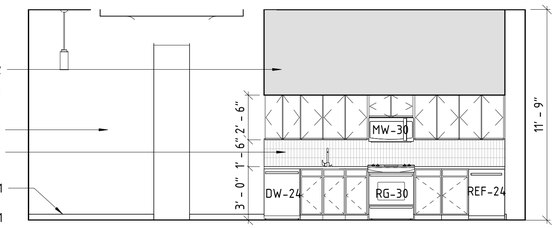


10 Int. Elev. Scale: 1/4" = 1'-0"

HALLWAY

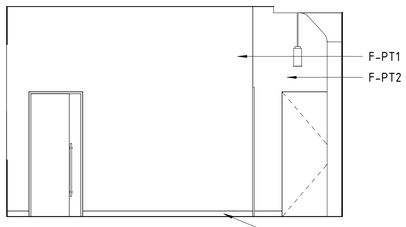


11 Int. Elev. Scale: 1/4" = 1'-0"

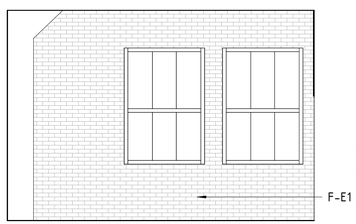


12 Int. Elev. Scale: 1/4" = 1'-0"

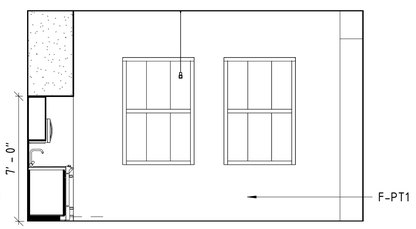
LIVING ROOM



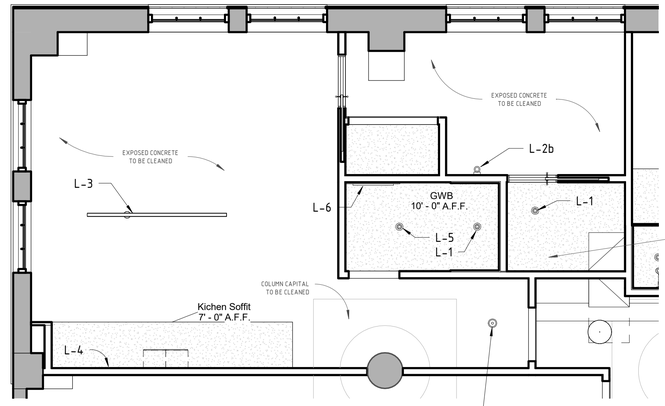
13 Int. Elev. Scale: 1/4" = 1'-0"



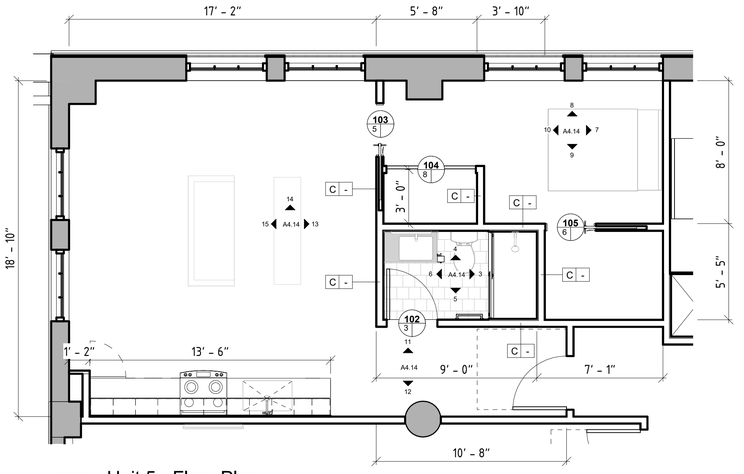
14 Int. Elev. Scale: 1/4" = 1'-0"



15 Int. Elev. Scale: 1/4" = 1'-0"



2 Reflected Ceiling Plan Scale: 1/4" = 1'-0"



1 Unit 5 - Floor Plan Scale: 1/4" = 1'-0"

1014

OOMBRA PROJECT #

2857; 2863 EAST GRAND BLVD DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST. SUITE 700
DETROIT, MI 48226

ARCHITECT
OOMBRA ARCHITECTS, LLC.
PHILADELPHIA, PA
WWW.OOMBRA.COM
215.948.2564

MEP ENGINEER
ETS ENGINEERING, INC.
P.O. BOX 1116 ROYAL OAK, MI 48068
418-1/2 S. WASHINGTON AVE. ROYAL OAK, MI 48067
215.948.2564

FOR REFERENCE, UNDER SEPARATE CONTRACT:
CIVIL ENGINEER
STONEFIELD
607 SHELBY STREET, SUITE 200
Detroit, MI 48226
248.247.1115

OOMBRA ARCHITECTS
OOMBRA ARCHITECTS, LLC.
PHILADELPHIA, PA
WWW.OOMBRA.COM
267.741.0007

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DESIGN DEVELOPMENT	08.02.2019

1 BEDROOM UNIT

A4.14

SCALE : AS INDICATED

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FINISHES

F-PT1	GENERAL PAINT STANDARD "WHITE" WALL COLOR, SHERWIN WILLIAMS: SW 7004 "SNOWBOUND" EGGSHELL FINISH ON WALLS, FLAT FINISH ON CEILINGS, RE: INTERIOR ELEVATIONS & SPECS.
F-PT2	GENERAL PAINT UNIT "ACCENT" WALL COLOR, SHERWIN WILLIAMS: SW 7019 "GAUNTLET GRAY" EGGSHELL FINISH ON WALLS, RE: INTERIOR ELEVATIONS & SPECS. SEMI-GLOSS ON DOOR FRAMES.
F-SS1	SOLID SURFACE COUNTERTOP, UNIT KITCHEN AND LIVINGROOM, DALTILE: NATURE FLECKS "LUMINESCE NQ75", RE: MILLWORK DETIALS.
F-CT1	CERAMIC TILE, MOSAIC, TILE COLOR AND GROUT COLOR BY ARCH
F-WB1	WOOD WALL BASE STRAIGHT, UNITS BEDROOM AND CLOSETS, PAINT GRADE WOOD, RE: ARCH DWGS. FOR PAINT COLOR, FLAT
F-KB1	BACKSPLASH AT KITCHEN COUNTER, UNITS KITCHENS, CERAMIC TILE 1X6 COLOR BY ARCH
F-B1	EXISTING STRUCTURAL MEMBER, UNITS LIVING ROOMS AND BEDROOMS, CLEANED AND UNPAINTED
F-E1	EXISTING MASONRY WALLS TO BE CLEANED AND REGROUTED AS NECESSARY, UNPAINTED
NOTE :	ALL FLOORING TO BE SEALED CONCRETE, PATCHES REQUIRED, EXCEPT BATHROOMS

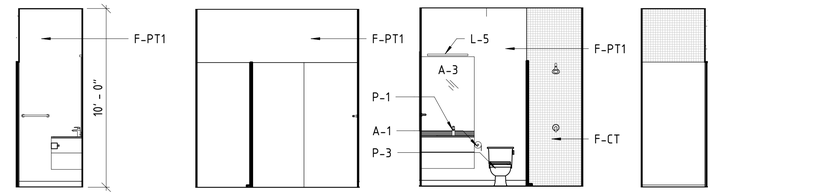
LIGHT FIXTURES:

L-1	SURFACE MOUNTED LED DOWNLIGHTS, 4" CLOSET, BATHROOM, B.O.D. PHILIPS LEDINAIRE DOWNLIGHT DN029B
L-2a	SUSPENDED LED FIXTURE IN TYP. UNIT CORRIDOR, B.O.D EUREKA SCOUT 10" 4049
L-2b	SURFACE MOUNTED LED WALL LIGHT, B.O.D EUREKA SCOUT 3049 10" BLKE
L-3	SUSPENDED LINEAR LIGHT LED FIXTURE, TYP. UNIT LIVING ROOMS, 4 NOS. TRACK HEADS, B.O.D DELTA LIGHT BOXY R AD
L-4	LED STRIP COVE LIGHTING UNDER KITCHEN CABINETS
L-5	SURFACE MOUNTED SQ. LED DOWNLIGHTS WITH EXHAUST, 4"X4" BATHROOM, B.O.D. DELTA MODEL SIG80-110LED
L-6	SURFACE MOUNTED, VANITY LIGHTING ABOVE BATHROOM MIRROR, EUREKA 24" STROKE 3542
L-7	PENDANT LIGHT, LIVING ROOM OVER DINING TABLE, B.O.D EUREKA BLOOM 4269

PLUMBING FIXTURES

P-1	FAUCET, RE: PLUMBING DWGS.
P-2	UNDERMOUNT SINK RE: PLUMBING DWGS. CASEWORK WHERE SHOWN ON DWGS.
P-3	WATER CLOSET, RE: PLUMBING DWGS.
P-4	BATHRUB, RE:PLUMBING DRAWINGS

BATHROOM



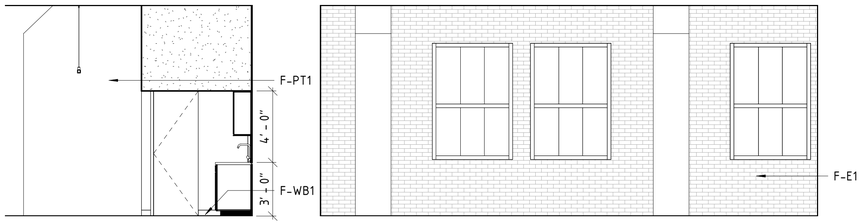
3 Int. Elev. Scale: 1/4" = 1'-0"

4 Int. Elev. Scale: 1/4" = 1'-0"

5 Int. Elev. Scale: 1/4" = 1'-0"

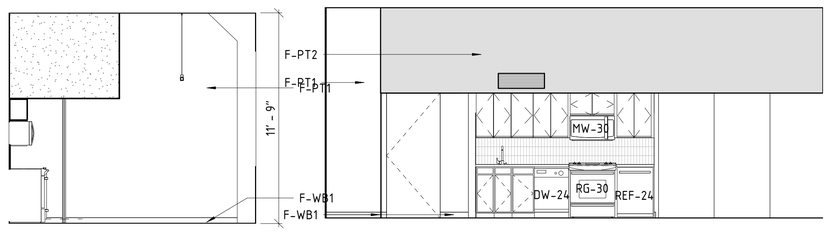
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STUDIO



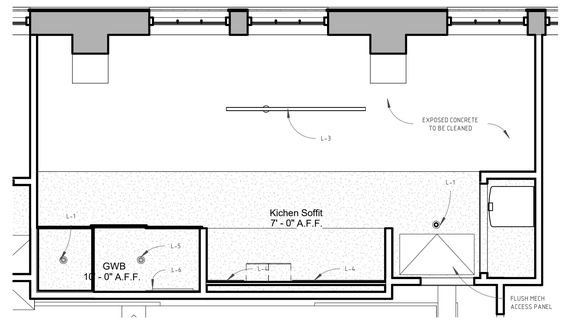
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8 Int. Elev. Scale: 1/4" = 1'-0"

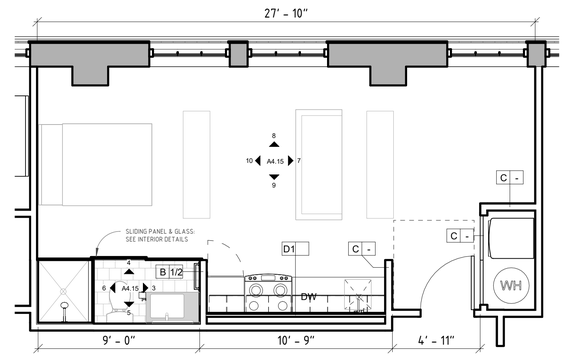


10 Int. Elev. Scale: 1/4" = 1'-0"

9 Int. Elev. Scale: 1/4" = 1'-0"



2 Unit 6 RCP Scale: 1/4" = 1'-0"



1 Unit 6 - Floor Plan Scale: 1/4" = 1'-0"

1014 OOMBRA PROJECT

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248.247.1115

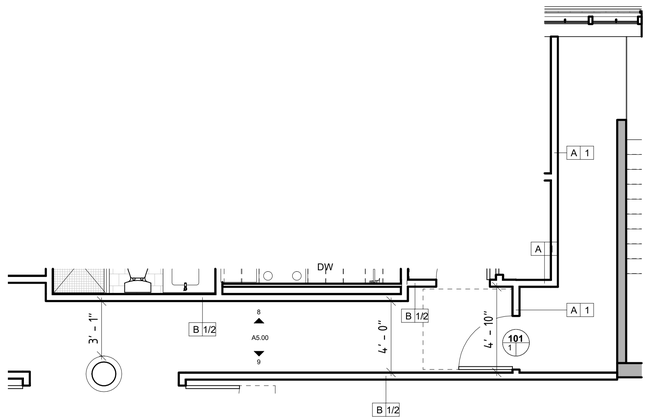
OOMBRA ARCHITECTS
OOMBRA ARCHITECTS, LLC.
PHILADELPHIA, PA
WWW.OOMBRA.COM
267.741.0007

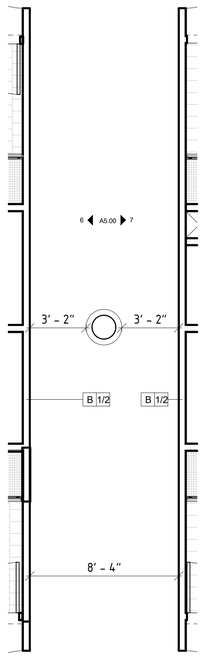
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DESIGN DEVELOPMENT	08.02.2019

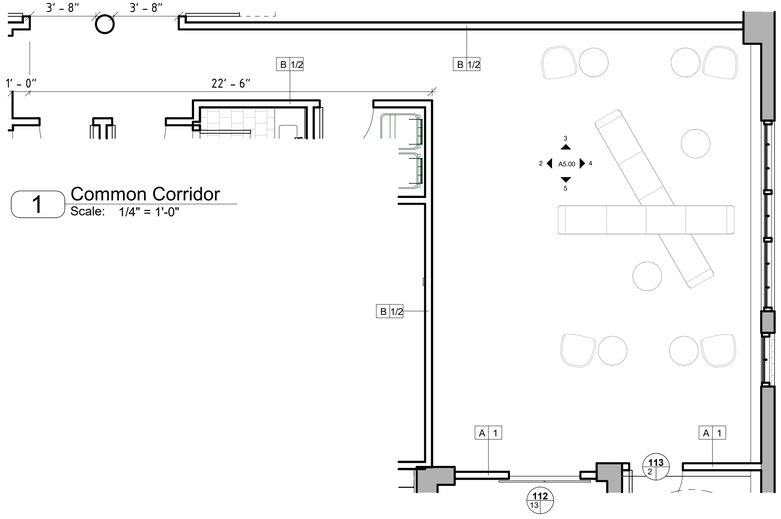
STUDIO UNIT

A4.15

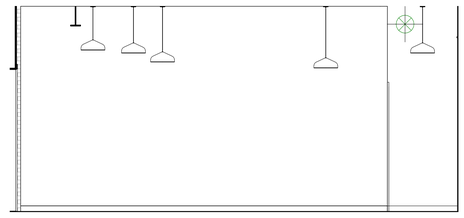
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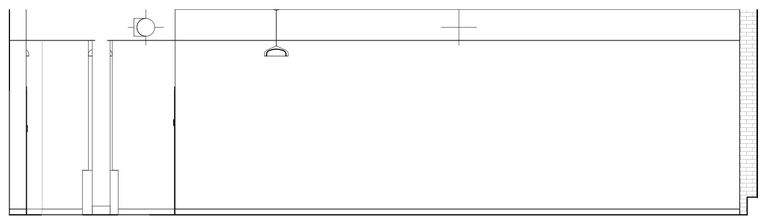




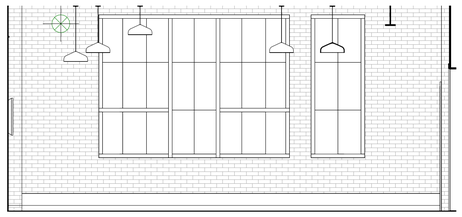
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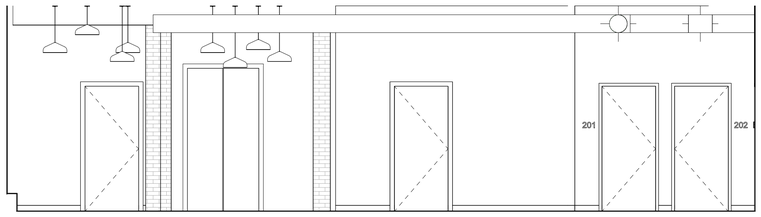
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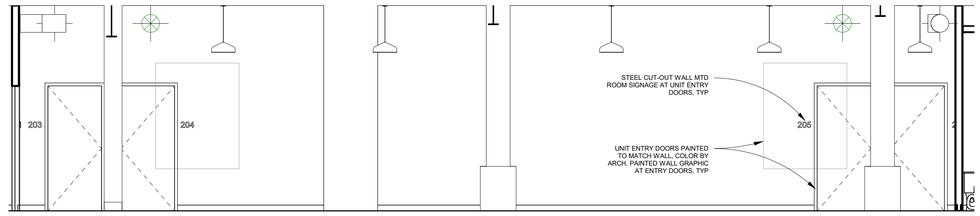
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Scale: 1/4" = 1'-0"



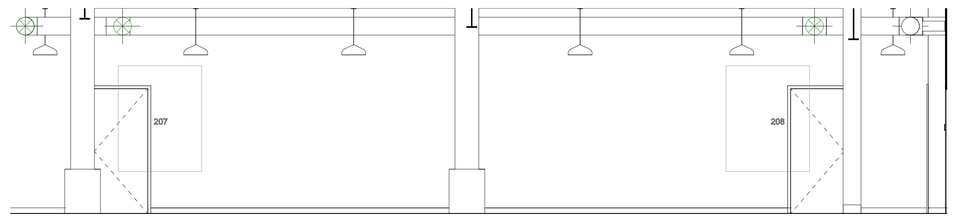
4 Int. Elev.
Scale: 1/4" = 1'-0"



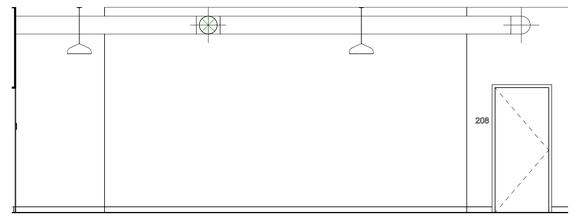
5 Int. Elev.
Scale: 1/4" = 1'-0"



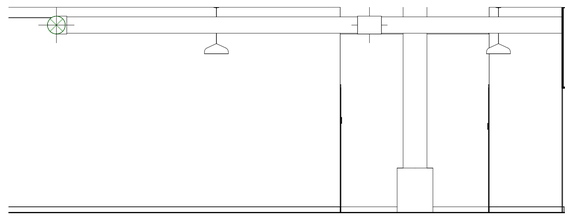
6 Int. Elev.
Scale: 1/4" = 1'-0"



7 Int. Elev.
Scale: 1/4" = 1'-0"



8 Int. Elev.
Scale: 1/4" = 1'-0"



9 Int. Elev.
Scale: 1/4" = 1'-0"

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
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ARCHITECT
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OOMBRA ARCHITECTS

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PHILADELPHIA, PA
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267.741.0007

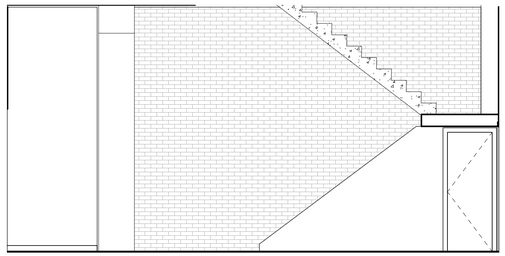
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COMMON CORRIDOR

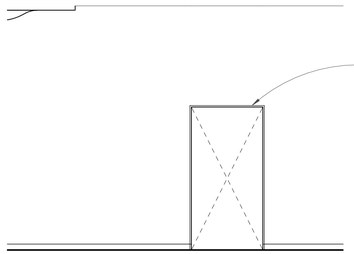
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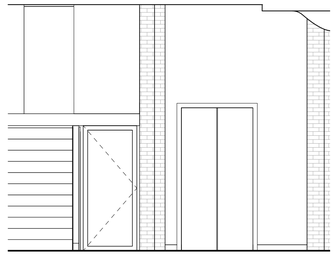
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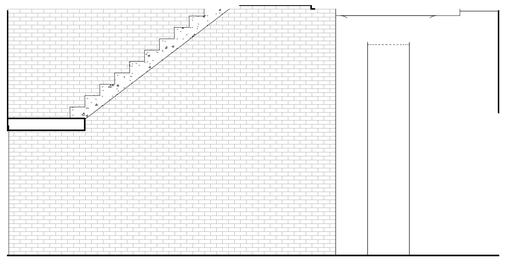
2 Residential Lobby East
NTS



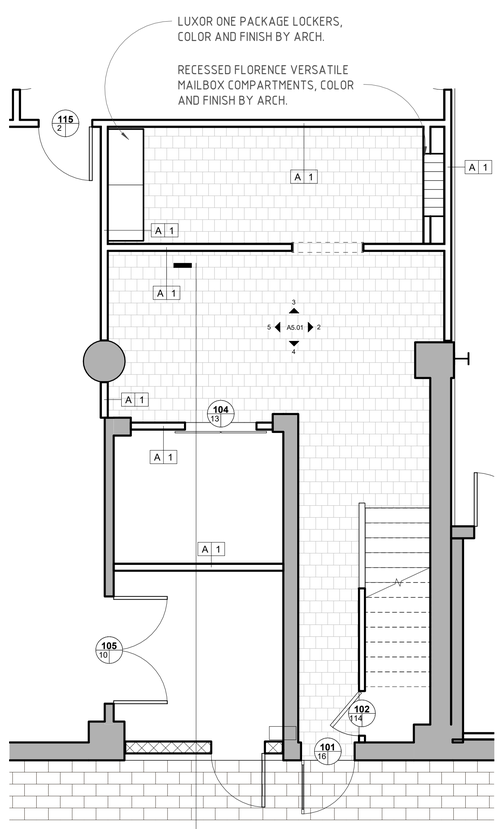
3 Residential Lobby North
NTS



4 Residential Lobby South
NTS



5 Residential Lobby West
NTS



1 RESIDENTIAL LOBBY
NTS

1014
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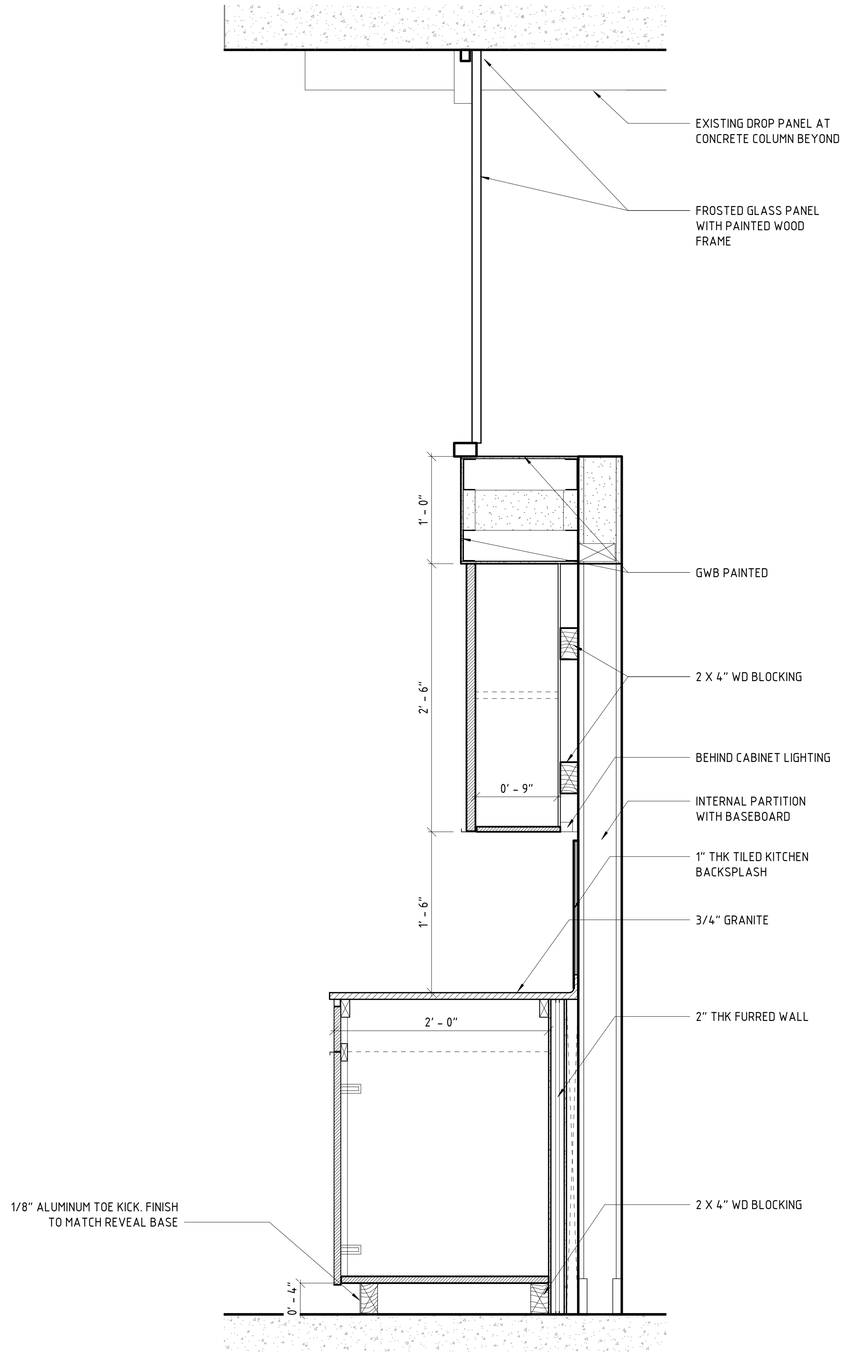
OOMBRA ARCHITECTS
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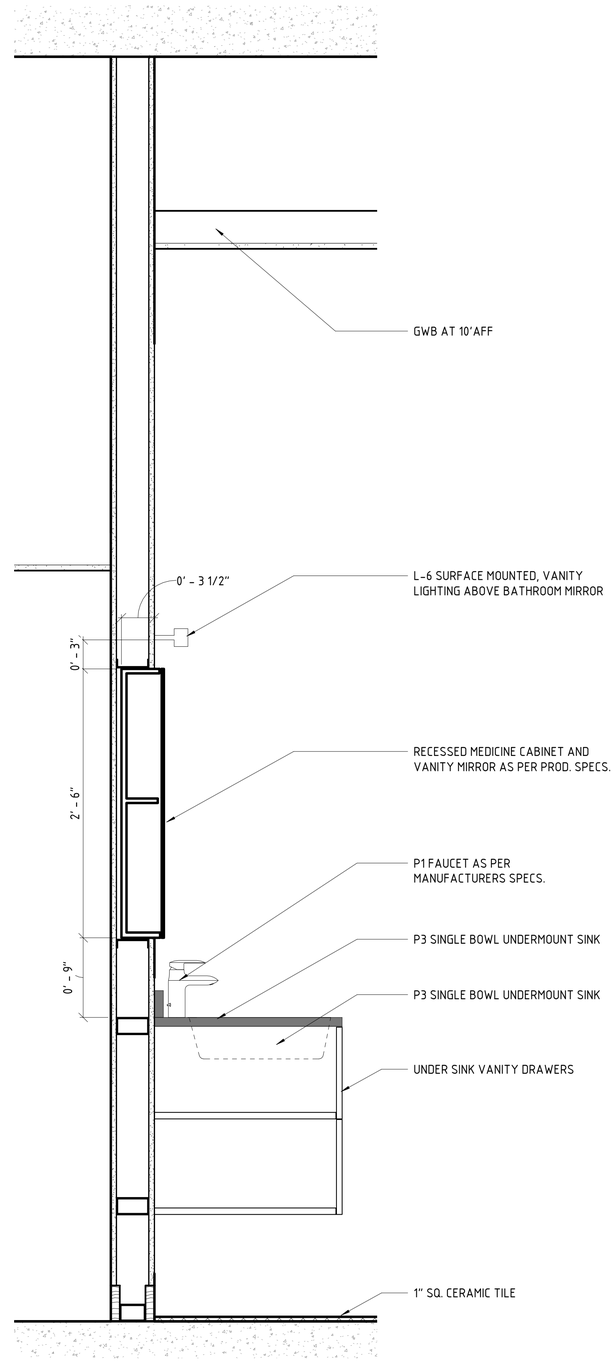
RESIDENTIAL LOBBY

A5.01

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1 KITCHEN DETAIL
Scale: 1 1/2" = 1'-0"



2 BATHROOM SECTION
Scale: 1 1/2" = 1'-0"

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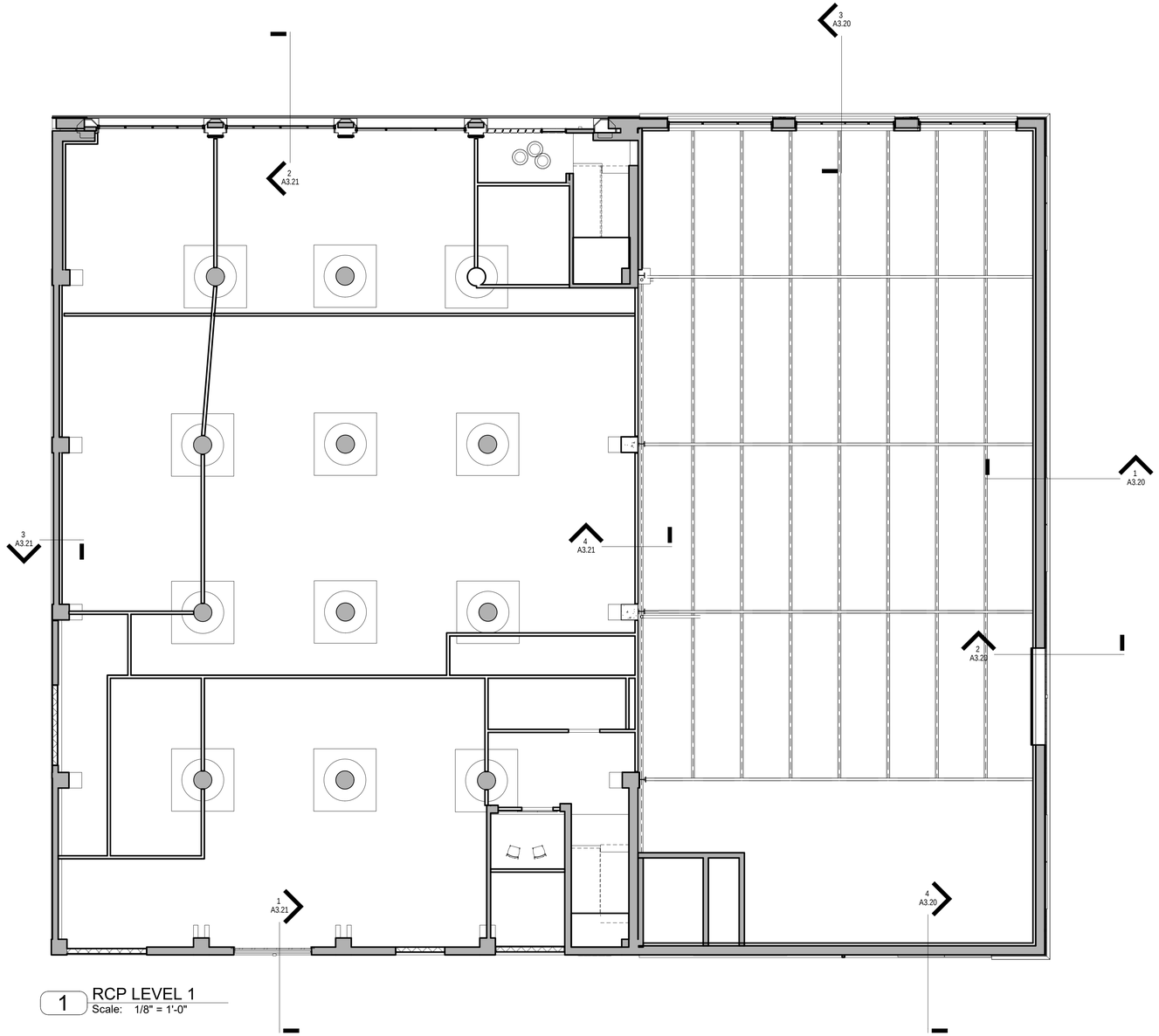
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DESIGN DEVELOPMENT	08.02.2019

INTERIOR SECTIONS & DETAILS

A5.10

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1 RCP LEVEL 1
Scale: 1/8" = 1'-0"

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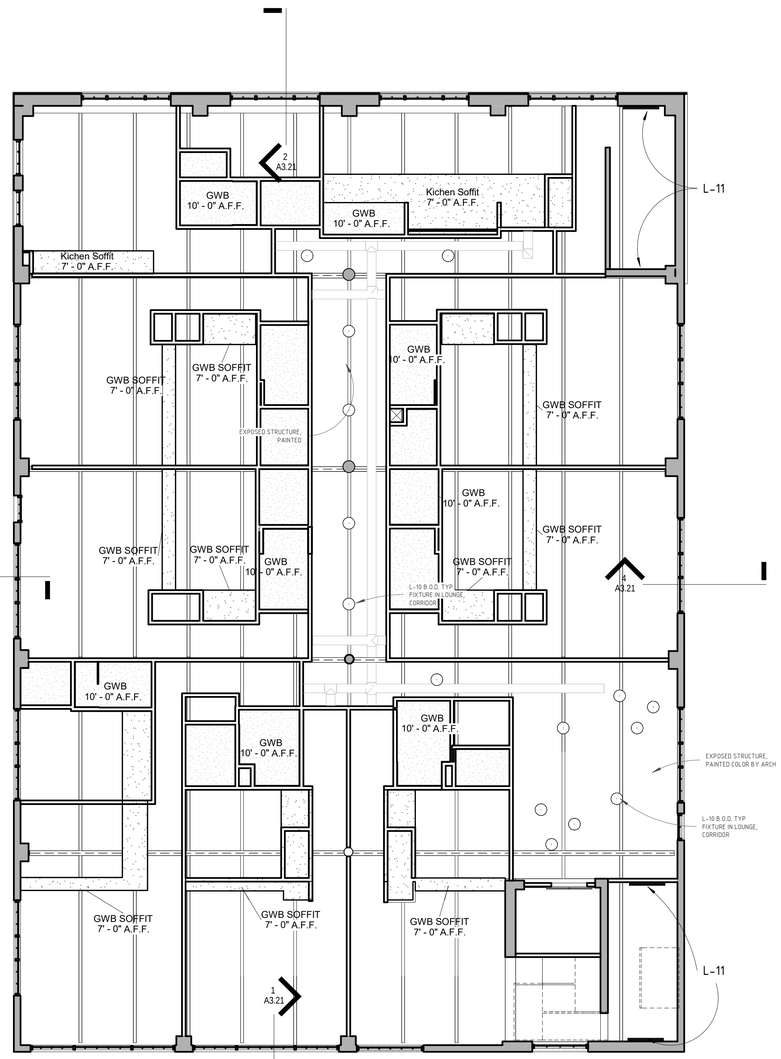
LEVEL 1 - REFLECTED CEILING PLAN

A6.01

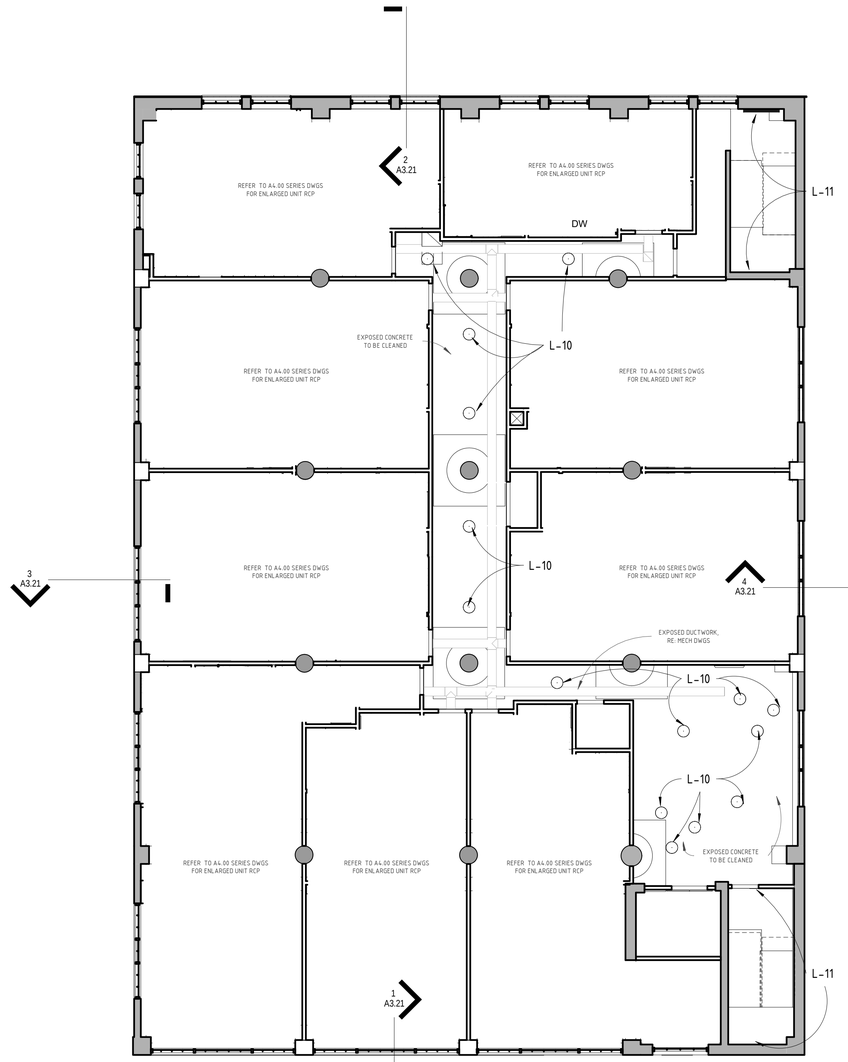
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LIGHTING FIXTURES

Fixtures	Description
L-10	SURFACE SUSPENDED PENDANT LIGHTING, TYP IN COMMON CORRIDORS AND LOBBY, B.O.D KUZCO LIGHTING PD9117
L-11	SURFACE MOUNTED LINEAR LIGHTING FIXTURE, AT 10' ELEVATION FROM LANDINGS OF ALL STAIRCASES



2 RCP LEVEL 3
Scale: 1/8" = 1'-0"



1 RCP LEVEL 2
Scale: 1/8" = 1'-0"

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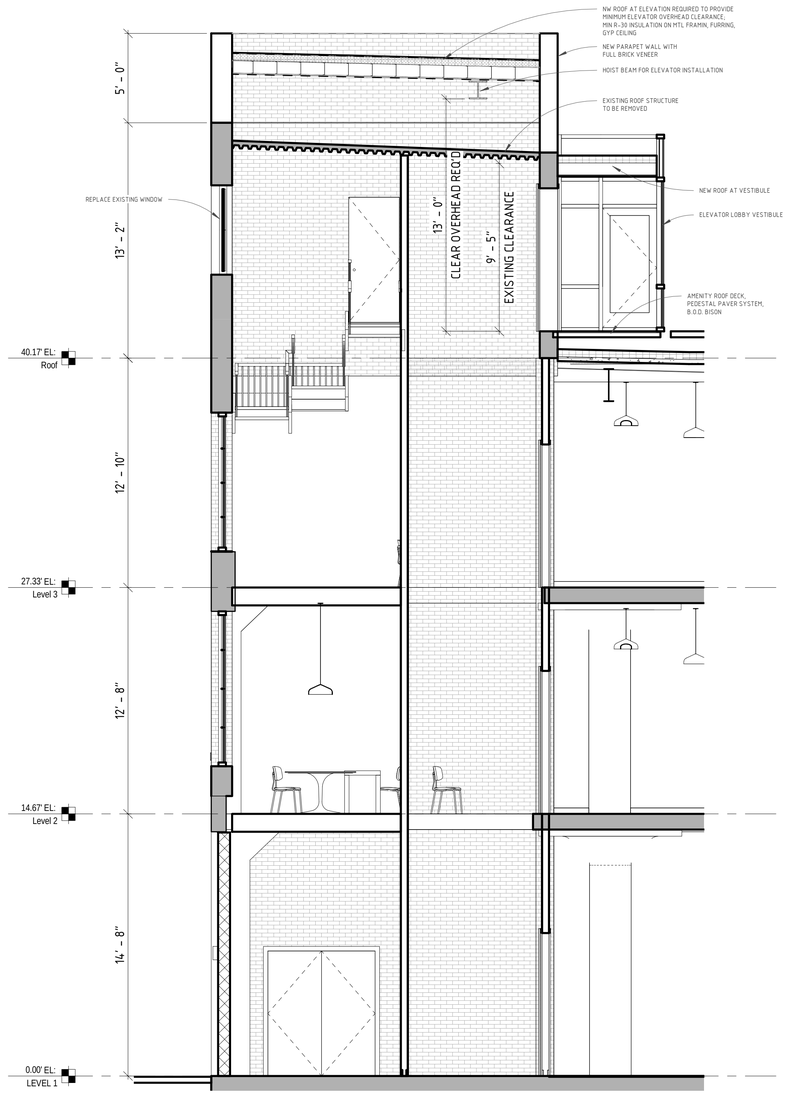
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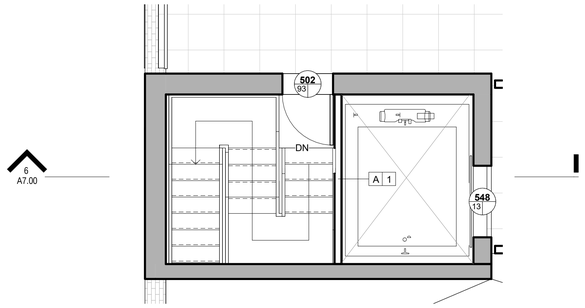
LEVEL 2&3 REFLECTED CEILING PLAN

A6.02

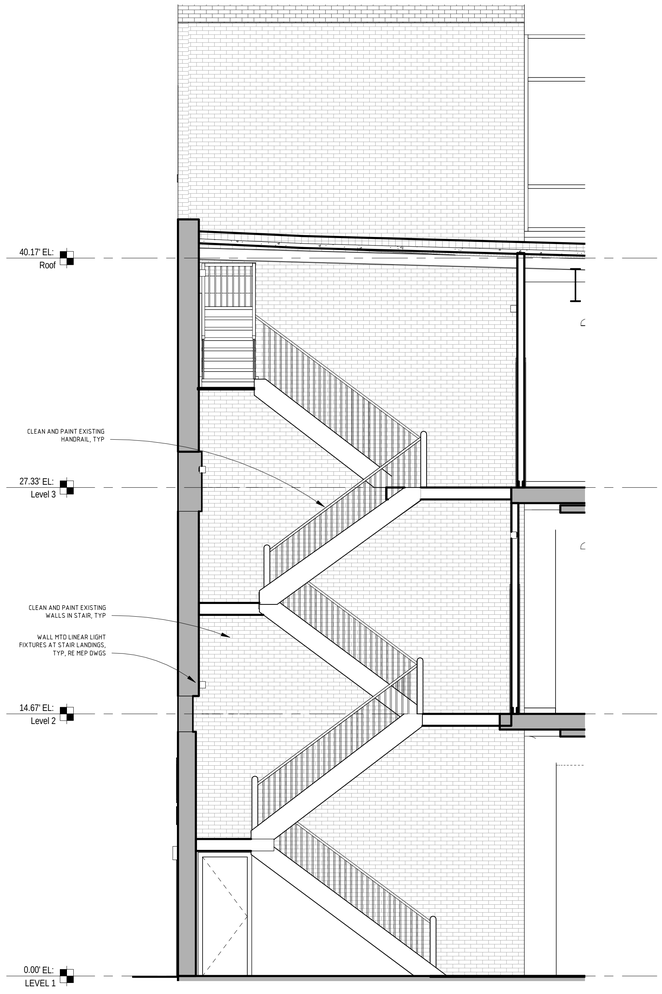
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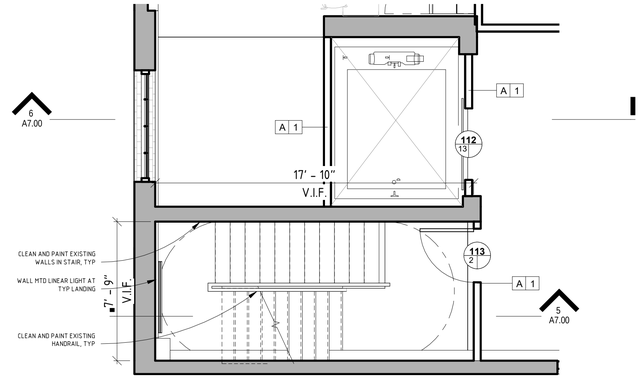
6 ELEVATOR SECTION
Scale: 1/4" = 1'-0"



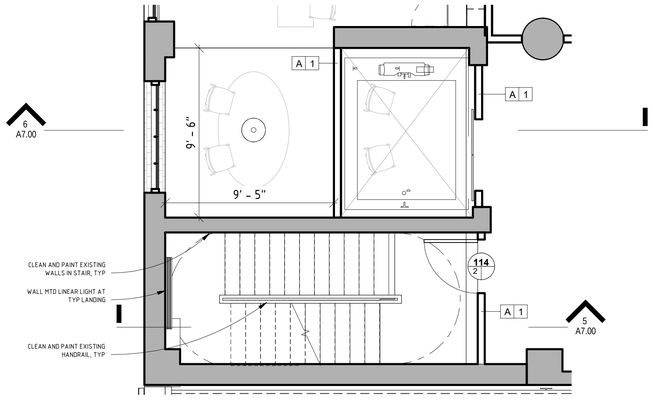
4 SOUTH STAIR - ROOF
Scale: 1/4" = 1'-0"



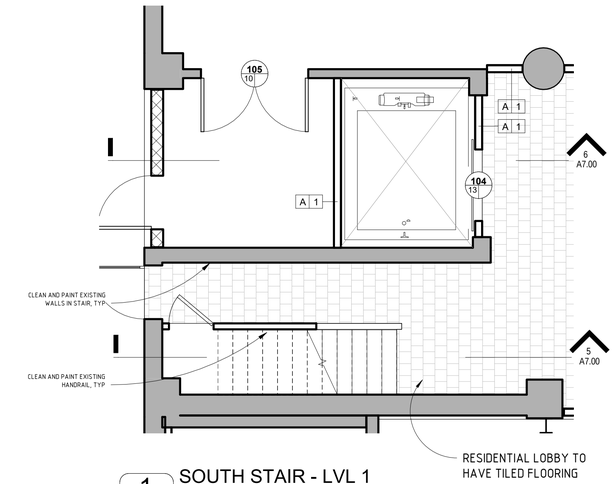
5 SOUTH STAIR SECTION
Scale: 1/4" = 1'-0"



3 SOUTH STAIR - LVL 3
Scale: 1/4" = 1'-0"



2 SOUTH STAIR - LVL 2
Scale: 1/4" = 1'-0"



1 SOUTH STAIR - LVL 1
Scale: 1/4" = 1'-0"

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST, SUITE 700
DETROIT, MI 48226

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PHILADELPHIA, PA
WWW.OOMBRA.COM
215.948.2564

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ETS ENGINEERING, INC.
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FOR REFERENCE, UNDER SEPARATE CONTRACT:
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STONEFIELD
607 SHELBY STREET, SUITE 200
Detroit, MI 48226
248.247.1115

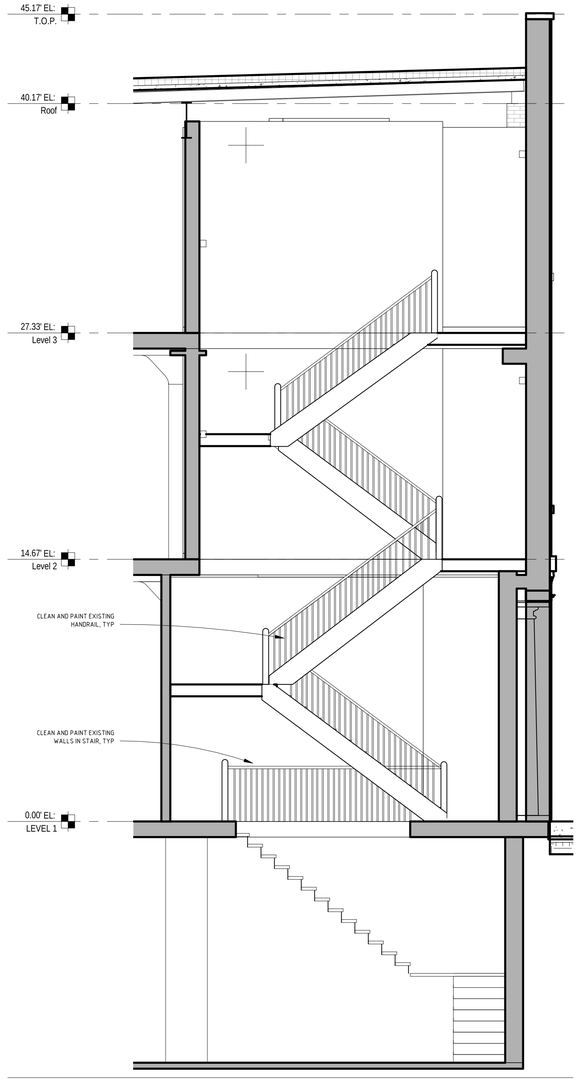
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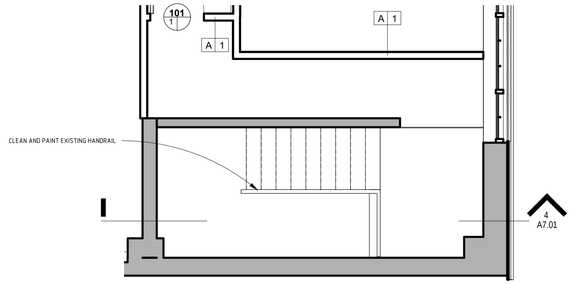
DRAWING ISSUE	DATE
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ENLARGED STAIR & ELEVATOR PLANS

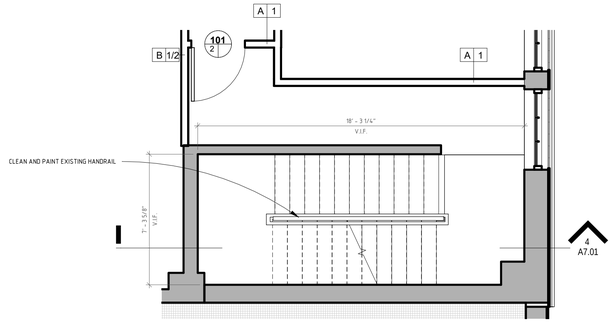
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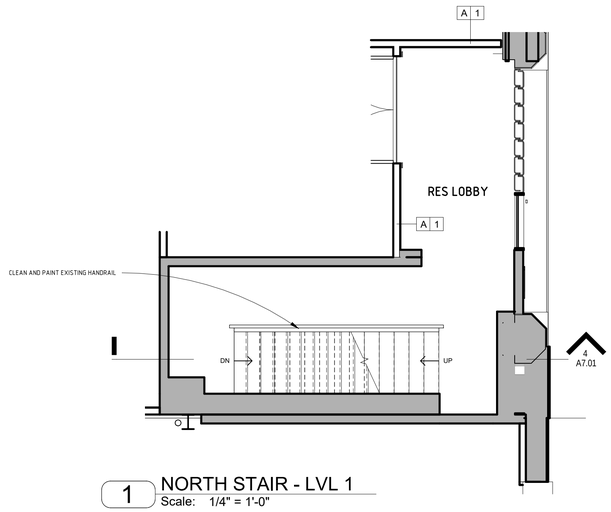




3 NORTH STAIR - LVL 3
Scale: 1/4" = 1'-0"



2 NORTH STAIR - LVL 2
Scale: 1/4" = 1'-0"



1 NORTH STAIR - LVL 1
Scale: 1/4" = 1'-0"

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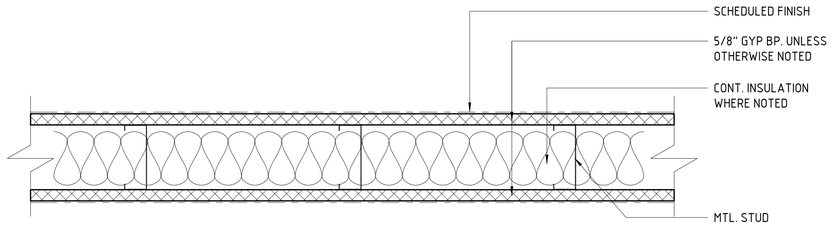
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ENLARGED STAIR & ELEVATOR PLANS

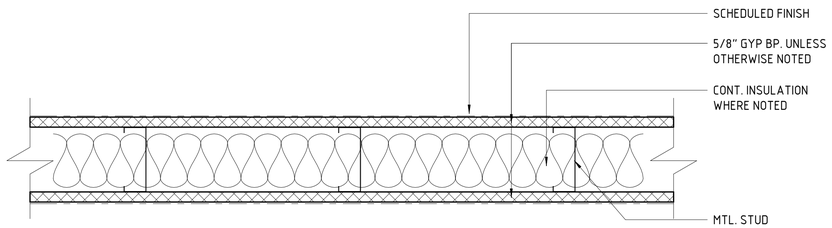
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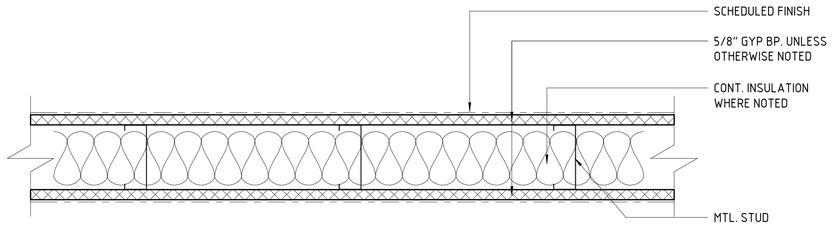
PARTITION WALL : INSIDE UNITS

WALL TYPE	FRAMING DIMENSION	FIRE RATING	STC
C	4 7/8"	-	-



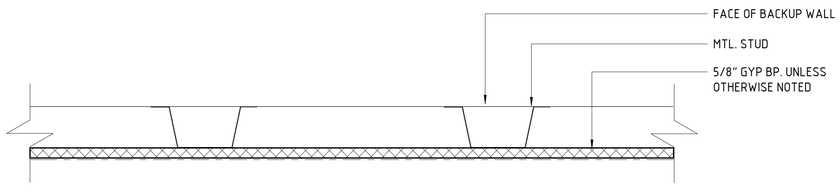
PARTITION WALL : BETWEEN UNITS & PARTITION

WALL TYPE	FRAMING DIMENSION	FIRE RATING	STC
B	4 3/4"	1/2 HR	STC 51



PARTITION WALL : BETWEEN UNITS

WALL TYPE	FRAMING DIMENSION	FIRE RATING	STC
A	4 3/4"	1 HR	STC 51



PARTITION WALL : FURRED WALL

WALL TYPE	FRAMING DIMENSION	FIRE RATING	STC
D1	2 7/8"	-	-
D2	4 1/8"	-	-

1 Partition Types
Scale: 3" = 1'-0"

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DESIGN DEVELOPMENT	08.02.2019

PARTITION TYPES & DETAILS

A8.00

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Door Schedule

Type Mark	Family	Door Type	Thickness	Height	Width	Door Material	Frame Material	Finish	Fire Rating	Remarks	Door Group	Count
												10
1	UNIT ENTRY DOOR	SF	0' - 2"	7' - 0"	3' - 0"	WD		PTD	30 MIN		1	19
		SF	0' - 2"	7' - 0"	3' - 0"			PTD			2	20
3	Standard Door White_OA	SF	0' - 2"	7' - 0"	2' - 10"	WD		PTD			3	31
4	Standard Door White_Closed_OA	SF	0' - 2"	7' - 0"	2' - 8"	WD		PTD			4	2
5	Sliding_Door_Pocket_door-_Wood_10126	SLIDING		7' - 0"	3' - 0"	WD		PTD			5	3
6	Sliding_Door_Pocket_door-_Wood_10126	SLIDING		7' - 0"	2' - 10"	WD		PTD			6	15
7	Door-Double-Flush_Panel_Frameless	DF	0' - 2"	7' - 0"	2' - 6"	WD		PTD			7	13
8	Door-Double-Flush_Panel_Frameless	DF	0' - 2"	7' - 0"	5' - 0"	WD		PTD			8	10
9	Door-Double-Flush_Panel_Frameless	DF	0' - 2"	7' - 0"	4' - 0"	WD		PTD			9	2
10	SIMPLE DOUBLE DOOR_OA	DF	0' - 2"	7' - 0"	6' - 0"	WD		PTD			10	5
12	08 - Type ACAC_Storefront_No Hardware	DF	0' - 1 3/4"			AL					12	2
13	Elevator Door_OA	-		8' - 0"	4' - 0"	-					13	5
		SF	0' - 2"					PTD			14	2
16	Door_Swing_Steel_Full_Glazed_Single Alternate 1_BSD	DF	0' - 1 1/2"	7' - 0"	3' - 0"		081113 - Door Frame, Steel, Exterior - BSD				15	1
16	Door-Double-Flush_Panel_Frameless	DF	0' - 2"	7' - 0"	6' - 0"	WD		PTD			16	1
53	Overhead-Rolling	RS	0' - 2"	10' - 0"	9' - 0"						17	1

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DESIGN DEVELOPMENT	08.02.2019

SCHEDULES - DOORS, WINDOWS, FINISHES

A8.10

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MECHANICAL ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TD 2-4 DATED NOVEMBER 1986 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
A.L.	2" THICK ACOUSTIC DUCT LINER
ALT	ALTERNATIVE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
AR	ACID RESISTANT
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
AT	AIR TRANSFER
ATR	AIR TEMPERATURE RISE
ATV	AIR TURNING VANES
AUTO	AUTOMATIC
AVE	AIR VOLUME EXTRACTOR
B-#	BOILER
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOT	BOTTOM
C	CONVECTOR
CAB	CABINET
CD-#	CEILING DIFFUSER
CIA	COMBUSTION INTAKE AIR
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWP	CHILLED WATER PUMP
CL	CENTERLINE
CLG	CEILING
CMP	CORRUGATED METAL PIPE
C.O.	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSER(ATE)
CRTN	LOW PRESSURE STEAM CONDENSATE
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CPD	CONDENSATE PUMP DISCHARGE
CP	CIRC PUMP
CT-#	COOLING TOWER
CUH-#	CABINET UNIT HEATER
CW	COLD WATER (DOMESTIC)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH/DEEP
DB	DRY BULB TEMPERATURE
DIA/ø	DIAMETER
DIFF	DIFFUSER
DISCH	DISCHARGE
DLR	DOUBLE LOUVER REGISTER
DWG	DRAWING
DUC	DOOR UNDER CUT
EF-#	EXHAUST FAN
EFF	EFFICIENCY
EG-#	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMD	END OF MAIN DRIP
EMER	EMERGENCY
EP	ELECTRIC/PNEUMATIC
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EXTN	EXTENSION
F&TT	FLOAT AND THERMOSTATIC TRAP
FCU-#	FAN COIL UNIT
F/SD	COMBINATION FIRE/SMOKE DAMPER
FD	FLOOR DRAIN
FD1	FIRE DAMPER TYPE
FEV	FLUE EXHAUST VENT
FIN FL/FF	FINISH FLOOR
FLR	FLOOR
FA	FRESH AIR
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FUR-#	FURNACE
G	GAS (NATURAL)
GA	GAUGE
GAL	GALLON
GALV	GALVANIZE(D)
GPM	GALLONS PER MINUTE
H	HEIGHT/HIGH
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HHWP	HEATING HOT WATER PUMP
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HRU	HEAT RECOVERY UNIT
HTR	HEATER
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HW	HOT WATER (DOMESTIC)
ID	INSIDE DIAMETER
INCIN	INCINERATOR
INSUL	INSULATION/INSULATE
IV	INTAKE VENT
INTR	INTERIOR
INV	INVERT
KIT	KITCHEN
KW	KILOWATT
L	LENGTH/LONG
LAV	LAVATORY
LP	LIQUID PETROLEUM
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LVR	LOUVER
M	METER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO/#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
ORD-#	OVERFLOW ROOF DRAIN
OS	OIL SUPPLY
OSD	OPEN SITE DRAIN
PE	PNEUMATIC/ELECTRIC
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
R/RAD	RADIUS
RA	RETURN AIR
RACU	ROOM AIR CONDITIONING UNIT
RADN	RADIATION
RG-#	RETURN AIR GRILLE
RCP	REINFORCED CONCRETE PIPE
RD-#	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RHW	RECIRCULATED HOT WATER (DOMESTIC)
RL	REFRIGERANT LIQUID
RM	ROOM
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSD	ROUND SUPPLY DIFFUSER
SA	SUPPLY AIR
SCHED	SCHEDULE
SD-#	SUPPLY DIFFUSER
SG-#	SUPPLY AIR GRILLE
SHT	SHEET
SP	STATIC PRESSURE
SPEC(S)	SPECIFICATION(S)
STD	STANDARD
T.A.D.	TRANSFER AIR DUCT
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPERATURE
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH-#	UNIT HEATER
UV	UNIT VENTILATOR
V	VENT
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VIF	VERIFY IN FIELD
VTR	VENT-THRU-ROOF
VVB	VARIABLE VOLUME BOX
W	WIDE/WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WC-#	WATER CLOSET
W.C.O.	WALL CLEANOUT
WH-#	WATER HEATER

MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION
	RETURN AIR GRILLE
	SUPPLY AIR DIFFUSER
	HORIZONTAL FIRE DAMPER
	VERTICAL FIRE DAMPER
	VOLUME DAMPER
	VERTICAL SMOKE DAMPER
Ts	TEMPERATURE SENSOR
T	THERMOSTAT OR SENSOR
M	DAMPER MOTOR
SP	STATIC PRESSURE PROBE
	VARIABLE AIR VOLUME REHEAT TERMINAL

SYMBOL	DESCRIPTION
36"x24"	SUPPLY AIR ELBOW UP DIMENSION DESCRIPTION: 1ST FIGURE = SIDE SHOWN 2ND FIGURE = SIDE NOT SHOWN ALL SIZES IN INCHES
X	SUPPLY AIR ELBOW DOWN
	EXHAUST/RETURN AIR ELBOW UP
	EXHAUST/RETURN AIR ELBOW DOWN
36"x12" 24"x12"	DOUBLE SIDE TRANSITION TRANSITION SLOPE SPECIFICATION: MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45° ALL SIZES IN INCHES
36"x12" 24"x12"	SINGLE SIDE TRANSITION
36"x18" 36"x12"	TOP TRANSITION (SLOPE ON TOP)
36"x18" 36"x12"	BOTTOM TRANSITION (SLOPE ON BOTTOM)
36"x18" 18"ø	RECTANGULAR TO ROUND TRANSITION
14"ø	ELBOW UP DIMENSION DESCRIPTION: 14"ø = ROUND DUCT 24"x12" FO = FLAT OVAL DUCT
	ELBOW DOWN
R	ELBOW - RADIUS (R) = 1.5 TIMES DIAMETER OF DUCT
	HIGH EFFICIENCY TAKEOFF W/DAMPER. TYPICAL FOR ALL FLEX AND RIGID DUCT TAKEOFFS.
FLEXIBLE DUCTWORK MAX. 5' IN LENGTH	CEILING DIFFUSER

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT.

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	CHECK VALVE
	BALANCING VALVE
	COMBINATION BALANCE VALVE & FLOW METER
S	SOLENOID VALVE
M	MOTOR OPERATED VALVE
	PLUG VALVE
	THREE WAY CONTROL VALVE
	CONTROL VALVE
	BUTTERFLY VALVE
	PRESSURE REGULATOR VALVE
	PRESSURE RELIEF VALVE
	THERMOMETER
	STRAINER
	UNION
	PRESSURE GAGE WITH COCK
	FLEXIBLE CONNECTOR
	CAP OFF EXISTING
	REMOVE
	CONNECT TO EXISTING
	PIPE TURNED UP
	PIPE TURNED DOWN
	PIPE OUT TOP
	PIPE OUT BOTTOM
HHWS	HEATING HOT WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
	VENT PIPING
FP	FIRE PROTECTION PIPING
FDCP	FIRE DEPARTMENT CONNECTION PIPING
NG	NATURAL GAS PIPING
ORC	OVERFLOW RAIN CONDUCTOR PIPING
RC	RAIN CONDUCTOR PIPING
SAN	SANITARY PIPING
ST	STORM PIPING
AW	ACID WASTE PIPING
AW	ACID VENT PIPING
GW	GREASY WASTE PIPING
OXY	OXYGEN PIPING
CA	COMPRESSED AIR

MECHANICAL DRAWING INDEX

SHT No.	SHEET TITLE	SCALE
M0.00	LEGEND, SYMBOLS, & ABBREVIATIONS	NO SCALE
M1.00	MECHANICAL NEW WORK PLAN - BASEMENT	1/8"=1'-0"
M1.01	MECHANICAL NEW WORK PLAN - FIRST LEVEL	1/8"=1'-0"
M1.02	MECHANICAL NEW WORK PLAN - SECOND LEVEL	1/8"=1'-0"
M1.03	MECHANICAL NEW WORK PLAN - THIRD LEVEL	1/8"=1'-0"
M1.04	MECHANICAL NEW WORK PLAN - ROOF	1/8"=1'-0"
M2.00	MECHANICAL DETAILS AND DIAGRAMS	NO SCALE
M3.00	TEMPERATURE CONTROL DIAGRAMS	NO SCALE
M4.00	MECHANICAL SCHEDULES	NO SCALE

HVAC GENERAL NOTES:

1. COORDINATE NEW DUCTWORK & PIPING WITH EXISTING SITE CONDITIONS, EQUIPMENT MANUFACTURERS, AND ALL OTHER TRADES TO AVOID INTERFERENCES.
2. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
3. ALL CORING THROUGH FLOORS/ROOF SHALL BE BY MECHANICAL CONTRACTOR.
4. ALL DUCTWORK & PIPING SHALL BE ROUTED AS HIGH AS POSSIBLE, UNLESS OTHERWISE NOTED. COORDINATE ROUTING WITH OTHER TRADES TO AVOID INTERFERENCES. ISOLATION VALVES, BALANCING VALVES, AND CONTROL VALVES SHALL BE NO MORE THAN 3'-6" ABOVE FINISHED CEILING.
5. BALANCE AIR & WATER SYSTEMS TO INDICATED FLOW RATES.
6. DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF EACH. REFER TO SCHEDULE SHEET.
7. ALL PIPING AND DUCTWORK SHALL BE INSULATED PER SPECIFICATIONS.
8. ALL PIPING AND DUCTWORK SHALL BE CONCEALED IN WALLS AND/OR CEILING SPACE UNLESS OTHERWISE INDICATED.
9. SEAL ALL PENETRATIONS THROUGH WALLS PER SPECIFICATIONS.
10. COORDINATE EXACT LOCATIONS OF DIFFUSERS AND RETURN/EXHAUST GRILLES WITH ARCHITECTURAL AND ELECTRICAL REFLECTED CEILING PLAN.
11. COORDINATE ROOM SENSOR(S) & T-STAT(S) LOCATIONS WITH ARCHITECT.
12. ALL FIRE DAMPERS SHALL BE DYNAMIC UNLESS OTHERWISE NOTED.
13. ALL FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM LENGTH FROM HARD DUCT CONNECTION TO ROUND NECK SUPPLY AIR DIFFUSERS.

GENERAL DEMOLITION NOTES:

1. COORDINATE WORK WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
2. THE DEMOLITION INCLUDED IN THIS SET IS INTENDED TO CONVEY A GENERAL DESCRIPTION OF SYSTEMS AND MATERIALS TO BE REMOVED. IT IS MANDATORY THAT THE CONTRACTOR MAKE A COMPLETE AND THOROUGH INVESTIGATION OF THE SITE TO INCLUDE ALL PERTINENT COSTS IN BASE BID.
3. REPLACE ANY EXISTING MATERIALS WHICH HAVE BEEN REMOVED TO FACILITATE DEMOLITION OR DAMAGE DUE TO DEMOLITION, STORAGE, CLEANING OR REINSTALLATION. NEW MATERIALS SHALL MATCH EXISTING.
4. DISRUPTION OF EXISTING SERVICES TO OTHER AREAS OF THE BUILDING MUST BE SCHEDULED AND COORDINATED TO MEET THE OWNERS REQUIREMENTS.
5. PATCH ADJACENT FINISH SURFACES AND BUILDING COMPONENTS DISTURBED OR OR DAMAGED BY THE REMOVAL OF EXISTING MATERIALS USING NEW MATERIALS TO MATCH SIMILAR, AS OUTLINED IN THE SPECIFICATIONS. INSTALLATION SHALL BE BY EXPERIENCED INSTALLERS QUALIFIED UNDER SPECIFICATION REQUIREMENTS.
6. REMOVE ALL MECHANICAL ITEMS AND INCIDENTAL EQUIPMENT ATTACHED TO SAID ITEMS SHOWN INCLUDING ALL CONTROLS, WIRING, SUPPORTS, ETC. BACK TO SOURCE.
7. ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED TO BE EXISTING UNLESS OTHERWISE NOTED.
8. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO DEMOLITION.
9. WHERE DUCT AND/OR PIPE INSULATION HAS BEEN DAMAGED, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
10. LIMITS OF DEMOLITION ARE INDICATED ON THE DRAWINGS, SHOULD EXISTING FIELD CONDITIONS REQUIRE MODIFICATIONS OF THESE LIMITS FOR THE PROPER INSTALLATION OF NEW WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH MODIFICATIONS.

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171 (TOLL FREE)

CAUTION !!!

THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

NOT FOR CONSTRUCTION

1014

OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST. SUITE 700
DETROIT, MI 48226

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WWW.OOMBRA.COM
215.948.2564

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DRAWING ISSUE	DATE
FEASIBILITY DOCUMENTS	1.25.2019
95% SCHEMATIC DESIGN	5.10.2019
100% SCHEMATIC DOCUMENTS	6.06.2019
100% DESIGN DEVOLVEMENT	8.01.2019

LEGENDS, SYMBOLS, AND ABBREVIATIONS

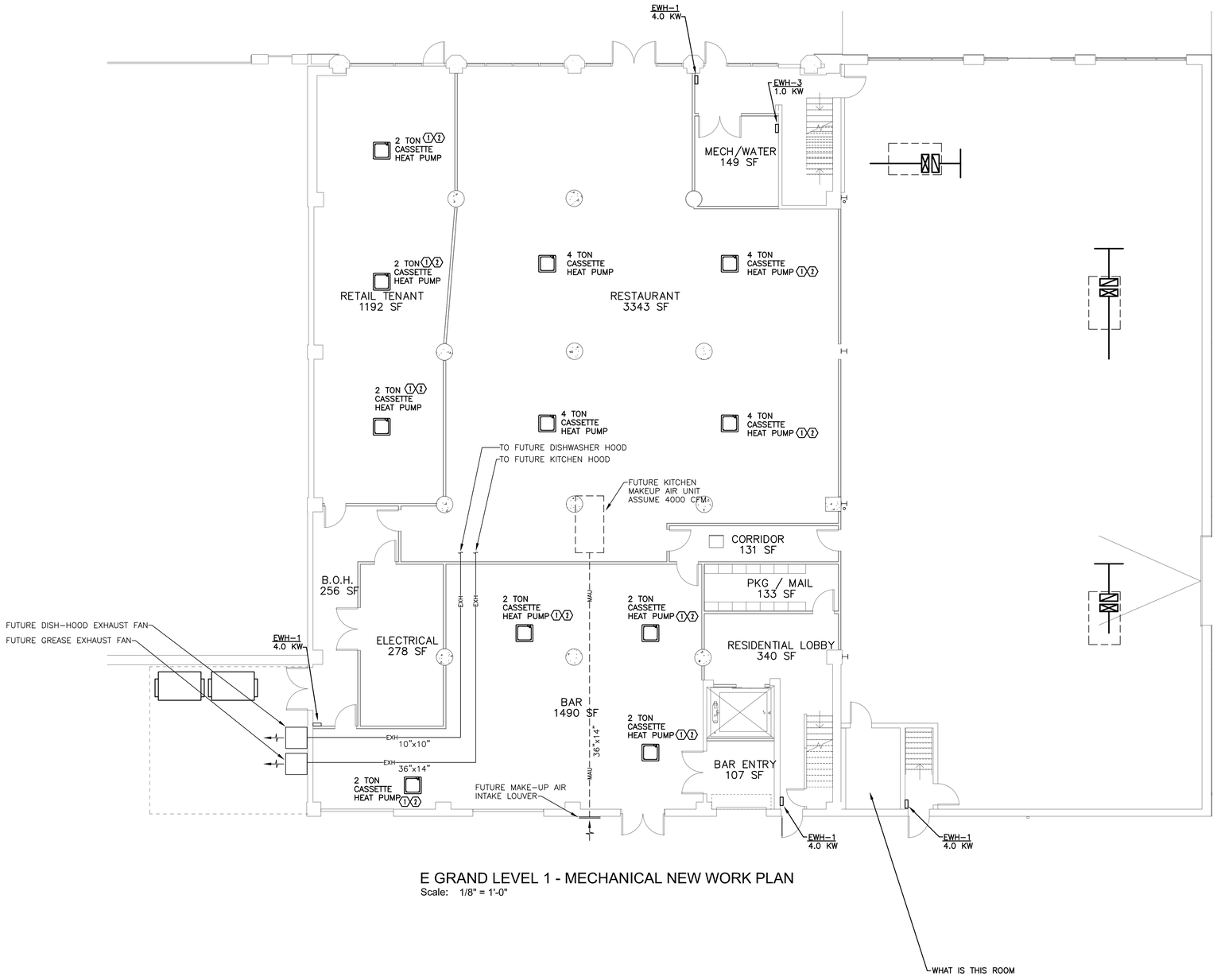
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KEYED NOTES:

1. ROUTE AND SIZE REFRIGERANT PIPING PER MANUFACTURES INSTRUCTIONS FROM OUTDOOR UNIT TO INDOOR UNIT. PROVIDE PATE PIPING CURB (SEAL ROOF PENETRATION). PROVIDE PIPING SUPPORTS AS REQUIRED.
2. ROUTE CONDENSATE PIPE DOWN IN WALL AND SPILL TO NEAREST FLOOR DRAIN OR SERVICE SINK.



E GRAND LEVEL 1 - MECHANICAL NEW WORK PLAN
Scale: 1/8" = 1'-0"

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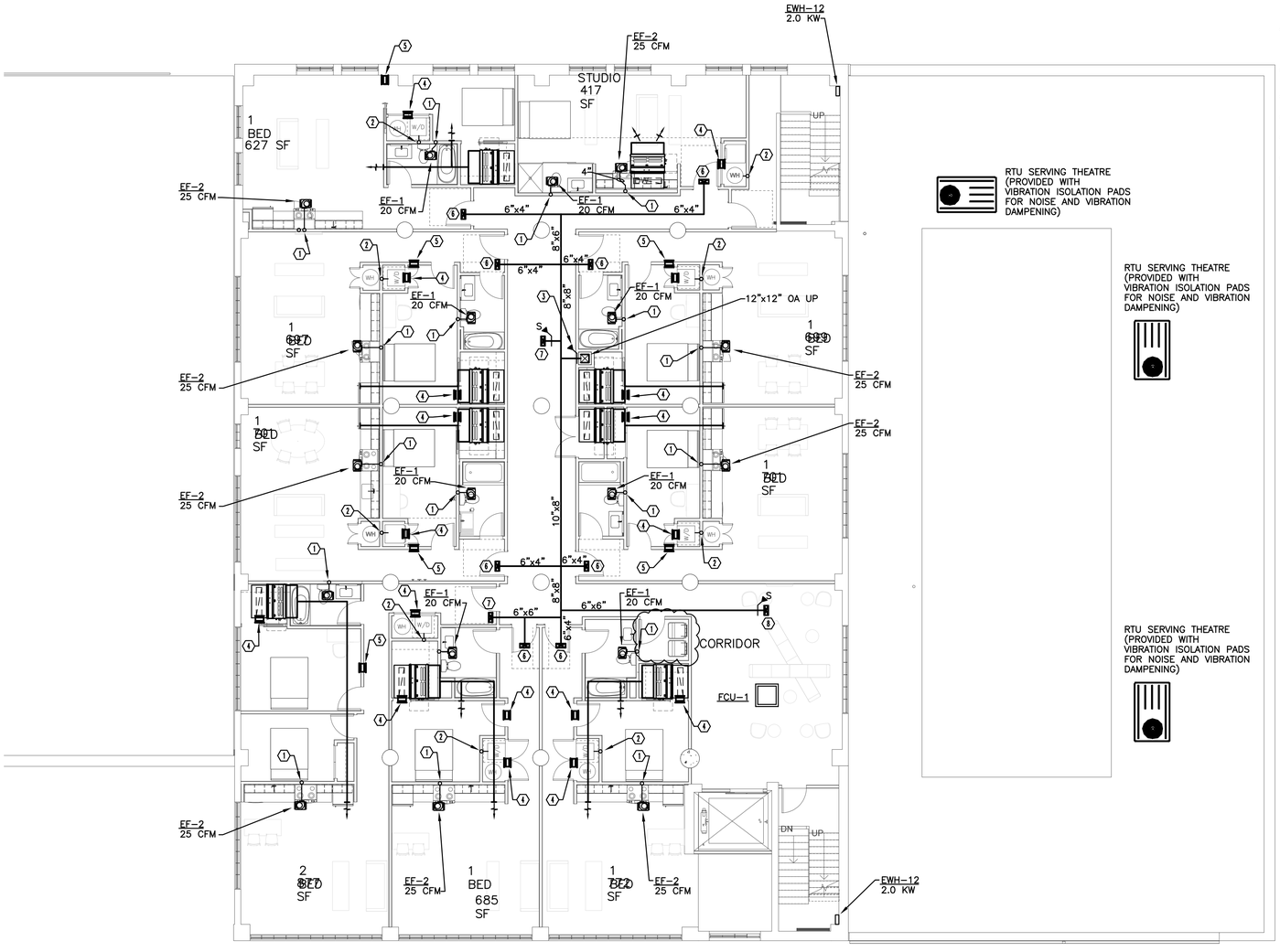
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LEVEL 1 - MECHANICAL NEW WORK PLAN

M1.01

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7/15/2019 2:11:19 PM



E GRAND LEVEL 2 - MECHANICAL NEW WORK PLAN

Scale: 1/8" = 1'-0"

KEYED NOTES:

1. 4" EXHAUST UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.
2. 4" DRYER EXHAUST UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.
3. COMBINATION SMOKE/FIRE DAMPER IN DUCTWORK ABOVE CEILING. 120V–1PH REQUIRED FOR DAMPER ACTUATOR. SMOKE DETECTOR BY ELECTRICAL/FIRE ALARM CONTRACTOR.
4. (2)TAG–1 – HIGH/HIGH.
5. (2)TAG–1 – HIGH/LOW.
6. SG–1 – 40 CFM
7. SG–1 – 50 CFM
8. SG–1 – 100 CFM

NOTE:
COMBINATION FIRE/SMOKE DAMPERS BASED UPON GREENHECK.

SQUARE/RECTANGULAR
GREENHECK MODEL CFSD–211–1 WITH 120 VOLT DAMPER ACTUATOR. DAMPER ACTUATOR BY MECH TRADES. DETECTION DEVICE AND WIRING BY ELECTRICAL (COORDINATE WITH ELECTRICIAN).

ROUND
GREENHECK MODEL FSDR–511 WITH 120 VOLT DAMPER ACTUATOR. DAMPER ACTUATOR BY MECH TRADES. DETECTION DEVICE AND WIRING BY ELECTRICAL (COORDINATE WITH ELECTRICIAN).

NOT FOR CONSTRUCTION

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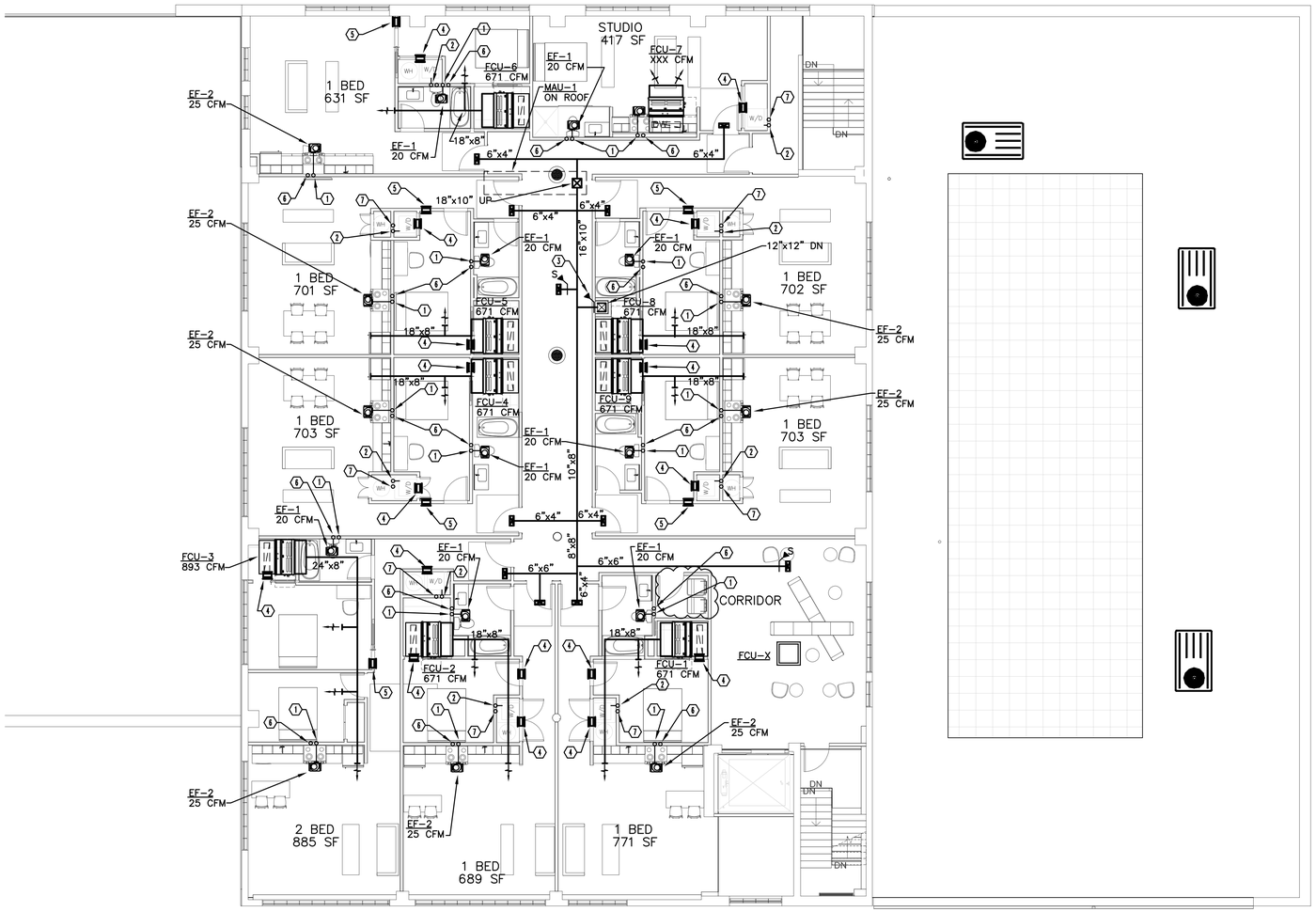
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LEVEL 2 - MECHANICAL NEW WORK PLAN

M1.02

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E GRAND LEVEL 3 - MECHANICAL NEW WORK PLAN

Scale: 1/8" = 1'-0"

KEYED NOTES:

1. 4" EXHAUST UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.
2. 4" DRYER EXHAUST UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.
3. COMBINATION SMOKE/FIRE DAMPER IN DUCTWORK ABOVE CEILING. 120V–1PH REQUIRED FOR DAMPER ACTUATOR. SMOKE DETECTOR BY ELECTRICAL/FIRE ALARM CONTRACTOR.
4. (2)TAG–1 – HIGH/HIGH.
5. (2)TAG–1 – HIGH/LOW.
6. 4" EXHAUST FROM BELOW AND UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.
7. 4" DRYER EXHAUST FROM BELOW AND UP THRU ROOF. CONTRACTOR SHALL FOLLOW THROUGH PENETRATION SECTION 607.6.1 OF MICHIGAN MECHANICAL CODE 2015. 2"x6" ARCHITECTURAL WALL IS REQUIRED TO FIT 4" DUCT – COORDINATE WITH GENERAL TRADES.

NOTE:
COMBINATION FIRE/SMOKE DAMPERS BASED UPON GREENHECK.

SQUARE/RECTANGULAR
GREENHECK MODEL CFSD–211–1 WITH 120 VOLT DAMPER ACTUATOR. DAMPER ACTUATOR BY MECH TRADES. DETECTION DEVICE AND WIRING BY ELECTRICAL (COORDINATE WITH ELECTRICIAN).

ROUND
GREENHECK MODEL FSDR–511 WITH 120 VOLT DAMPER ACTUATOR. DAMPER ACTUATOR BY MECH TRADES. DETECTION DEVICE AND WIRING BY ELECTRICAL (COORDINATE WITH ELECTRICIAN).

1014
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LEVEL 3 - MECHANICAL NEW WORK PLAN

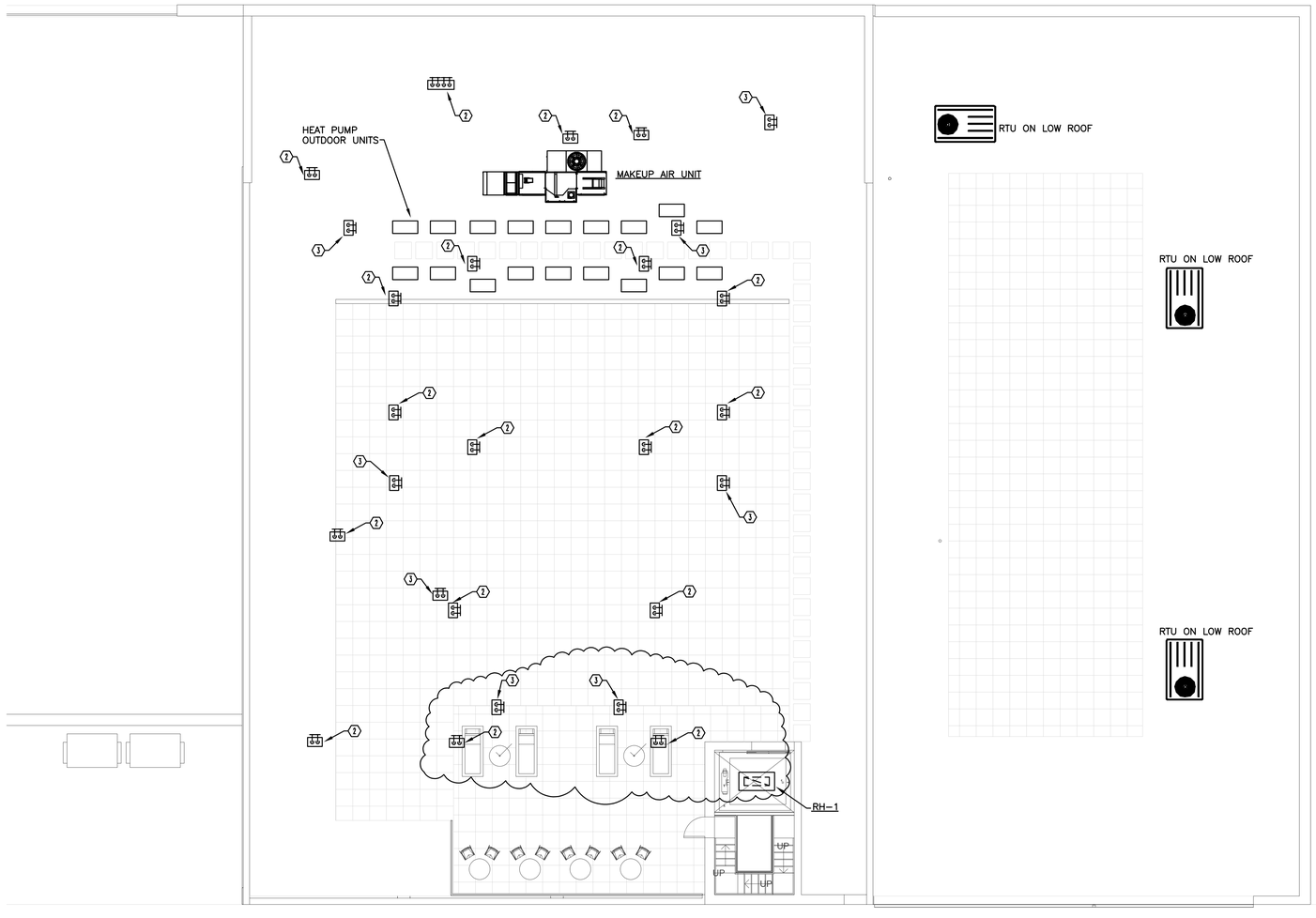
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NOT FOR CONSTRUCTION

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KEYED NOTES:

1. PROVIDE OUTDOOR UNIT EQUIPMENT ROOF STAND – REFER TO DETAIL SHEET.
2. 4"ø EXHAUST VENT WITH BACKDRAFT DAMPER AND BIRDSCREEN PROVIDE MECHANICAL ROOF INTEGRATED DOGHOUSE – BUILT UP ROOFING SYSTEM (REFER TO DETAIL)(TYP.)
3. 4"ø EXHAUST VENT WITH BACKDRAFT DAMPER PROVIDE MECHANICAL ROOF INTEGRATED DOGHOUSE – BUILT UP ROOFING SYSTEM (REFER TO DETAIL)(TYP.)



E GRAND ROOF - MECHANICAL NEW WORK PLAN
Scale: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

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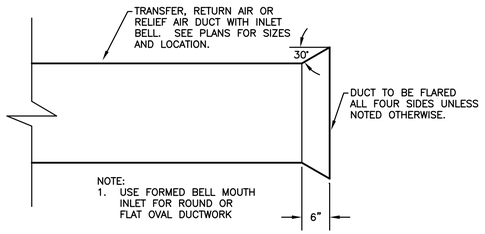
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ROOF - MECHANICAL NE
WORK PLAN

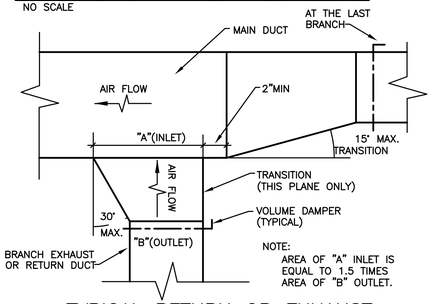
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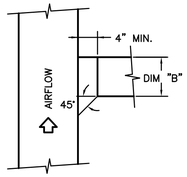
SHEETMETAL FORMED INLET DETAIL

NO SCALE



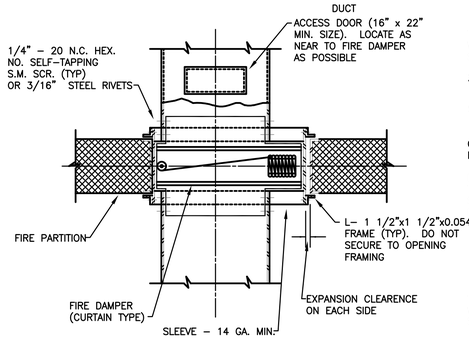
TYPICAL RETURN OR EXHAUST DUCT CONNECTION DETAIL

NO SCALE



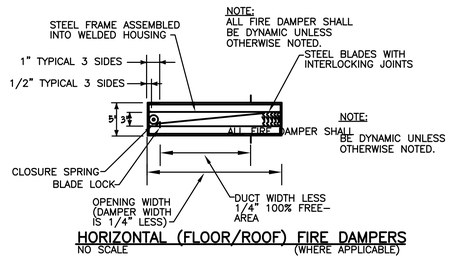
TYPICAL SUPPLY DUCT CONNECTION DETAIL

NO SCALE



CURTAIN TYPE FIRE DAMPER DETAIL – DUCT THRU FLOOR

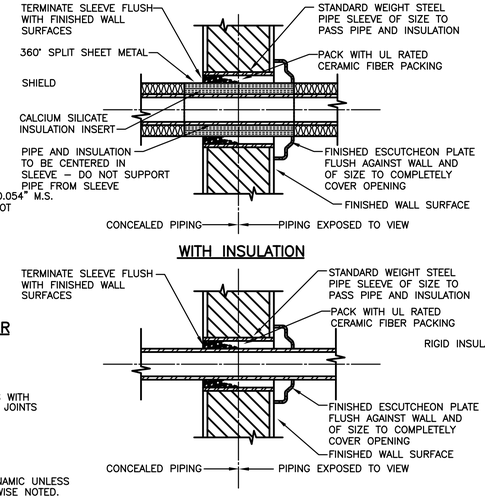
NO SCALE



HORIZONTAL (FLOOR/ROOF) FIRE DAMPERS

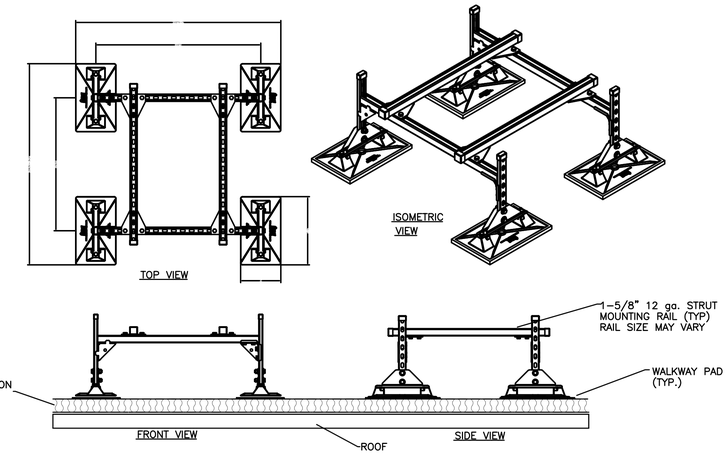
NO SCALE (WHERE APPLICABLE)

UNDERWRITERS LABORATORIES INC. CLASSIFIED FIRE DAMPERS TO BE CONSTRUCTED AND HAVE A FIRE RESISTANCE RATING EQUAL TO THE BUILDING STRUCTURE IT SERVES, OR GREATER, IF LOCAL AUTHORITATIVE CODE DICTATES.



TYPICAL DETAIL OF PIPE THRU INTERIOR WALLS

NO SCALE



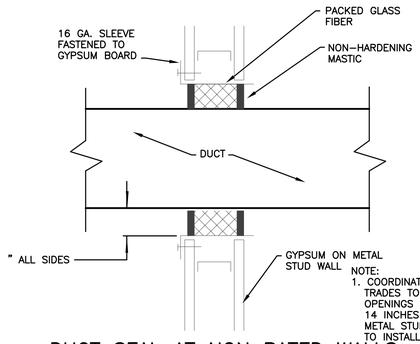
NOTES:
1. THE MAXIMUM LOAD PER MANUFACTURER. (APPROX. 300 LBS PER BASE)
2. COORDINATE FINAL SIZE WITH APPROVED SHOP DRAWING OF UNIT SUPPORTING.
3. THE LOAD MUST BE CENTERED ON THE MIRO 6–HD(R)
4. SUPPORT IS DESIGNED TO NOT EXCEED 3.0 PSI TO THE FINISHED ROOF SURFACE UNDER EACH BASE

PIPE SUPPORT ON ROOF

NO SCALE

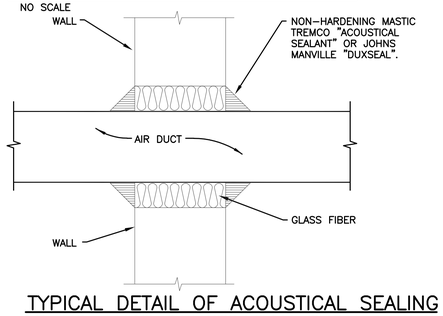
KEY INFORMATION

- Designed to support mechanical units, cabinets and other devices.
- Designed to meet project specific dimensions with adjustability as specified.
- 1-5/8" 12 ga. strut rails for anchoring equipment to the support. Capacity of rail to be verified based on unit weight.
- Support is designed to not exceed 3.0 psi to the finished roof surface under each base.
- Base Material: Polycarbonate
- All metal parts are either stainless steel, hot-dip galvanized or pre-galvanized.
- Non-Anchored supports do not provide significant resistanceto wind or seismic loading. Contact MIRO Industries for wind and seismic solutions.
- Manufacturer suggested loading is not to exceed 300 lbs to each base. Contractor to ensure load distribution to each base does not exceed suggested loading to each base.



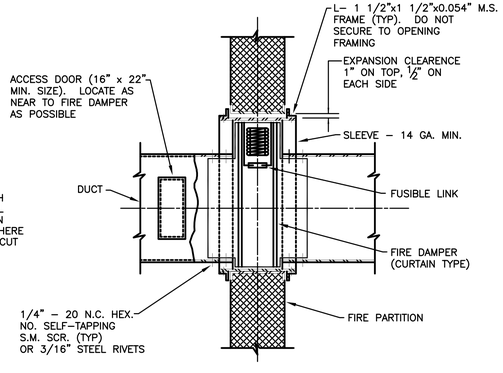
DUCT SEAL AT NON RATED WALLS

NO SCALE



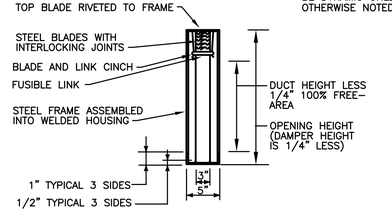
TYPICAL DETAIL OF ACOUSTICAL SEALING OF AIR DUCT PENETRATION THRU A WALL ALL DUCTS MUST BE SEALED IN THIS MANNER

NO SCALE



CURTAIN TYPE FIRE DAMPER DETAIL – DUCT THRU WALL

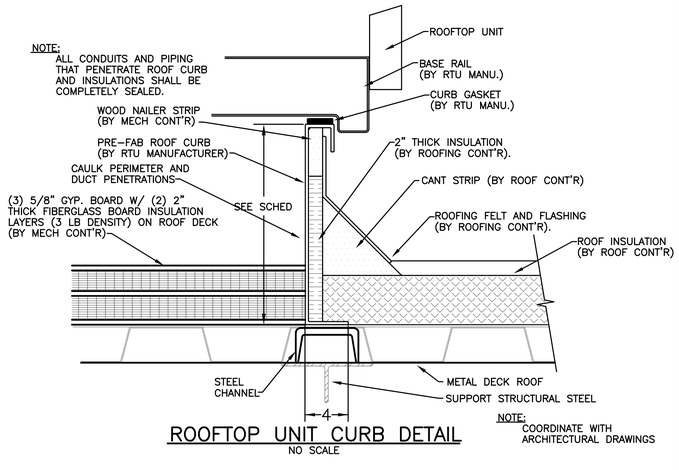
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VERTICAL FIRE DAMPERS

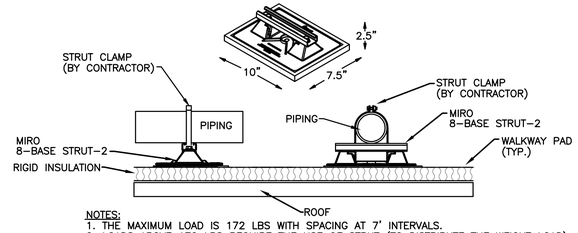
SCALE: NONE(WHERE APPLICABLE)

UNDERWRITERS LABORATORIES INC. CLASSIFIED FIRE DAMPERS TO BE CONSTRUCTED AND HAVE A FIRE RESISTANCE RATING EQUAL TO THE BUILDING STRUCTURE IT SERVES, OR GREATER, IF LOCAL AUTHORITATIVE CODE DICTATES.



ROOFTOP UNIT CURB DETAIL

NO SCALE



NOTES:
1. THE MAXIMUM LOAD IS 172 LBS WITH SPACING AT 7' INTERVALS.
2. LOADS ABOVE 172 LBS REQUIRE THE USE OF STRUT (TO DISTRIBUTE THE WEIGHT LOAD).
2. THE LOAD MUST BE CENTERED ON THE MIRO 8–BASE STRUT–2.
3. THE PIPING SHALL BE ATTACHED USING STANDARD STRUT CLAMPS.

PIPE SUPPORT ON ROOF

NO SCALE

NOT FOR CONSTRUCTION

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MECHANICAL DETAILS AND DIAGRAMS

M2.00

SCALE : AS INDICATED

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TEMPERATURE CONTROLS DIAGRAMS

M3.00

NOT FOR CONSTRUCTION

SCALE : AS INDICATED

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FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION	MH	LEGEND NOTE
AID	ADDRESSABLE INTERFACE DEVICE	-	
D	DUCT MOUNTED SMOKE DETECTOR, PHOTOELECTRIC	DUCT	
H	HEAT DETECTOR, 190 DEGREES F FIXED TEMPERATURE (UNO), CEILING MOUNTED	CLG	
P	PHOTOELECTRIC SMOKE DETECTOR, CEILING MOUNTED	CLG	
FAA	FIRE ALARM ANNUNCIATION PANEL	56"	
FAPS	FIRE ALARM POWER SUPPLY	-	
FAP	FIRE ALARM CONTROL PANEL	-	S
F	AUDIBLE AND VISIBLE NOTIFICATION APPLIANCE (HORN/STROBE), WALL MOUNTED	80"	
F	AUDIBLE AND VISIBLE NOTIFICATION APPLIANCE (HORN/STROBE), CEILING MOUNTED	CLG	
S	VOICE/ALARM COMMUNICATIONS AUDIBLE AND VISIBLE NOTIFICATION APPLIANCE (SPEAKER/STROBE), WALL MOUNTED	80"	
S	VOICE/ALARM COMMUNICATION AUDIBLE AND VISIBLE NOTIFICATION DEVICE (SPEAKER/STOBE), CEILING MOUNTED	CLG	
V	VISIBLE NOTIFICATION APPLIANCE (STROBE), WALL MOUNTED	80"	
V	VISIBLE NOTIFICATION APPLIANCE (STROBE), CEILING MOUNTED	CLG	
	MANUAL FIRE ALARM PULL STATION, AND AUDIBLE AND VISIBLE NOTIFICATION APPLIANCE ABOVE (HORN/STROBE), WALL MOUNTED	44"/80"	
	MANUAL FIRE ALARM PULL STATION, WALL MOUNTED	44"	
F	VOICE/ALARM COMMUNICATIONS HORN TYPE LOUDSPEAKER, CEILING MOUNTED	CLG	
F	VOICE/ALARM COMMUNICATIONS HORN TYPE LOUDSPEAKER, WALL MOUNTED	96"	
S	SMOKE DETECTOR BEAM TRANSMITTER	-	
S	SMOKE DETECTOR BEAM RECEIVER	-	
T	SMOKE DAMPER ACTUATOR AND ASSOCIATED SMOKE DETECTOR, TYPE PER PLANS	-	
R	WATER FLOW SWITCH CONNECTION	-	D
SD	SUPERVISORY VALVE TAMPER SWITCH CONNECTION	-	D
FS	SURFACE MAGNETIC DOOR HOLDER	6" BELOW TOP OF DOOR	
SV	ELECTRONIC RELEASE DOOR CLOSER	-	
H	FIRE ALARM BELL, WALL MOUNTED	96"	
S	MICRO SWITCH IN KITCHEN HOOD FOR FIRE SUPRESSION SYSTEM. SUPPLIED BY OTHERS, WIRED BY EC	HOOD	
B	POST INDICATOR VALVE TAMPER SWITCH	-	

KH

PV

ELECTRICAL SYMBOL LEGEND NOTES

A. VIDEO PROJECTOR RECEPTACLE TO BE MOUNTED AT 96" A.F.F. U.N.O., BEHIND WALL MOUNTED PROJECTOR BRACKET. COORDINATE EXACT LOCATION WITH PROJECTOR ROUGH-IN DETAIL ON THE "ES" SERIES DRAWINGS AND DIVISION 27 CONTRACTOR PRIOR TO ROUGH-IN.

B. CONTRACTOR SHALL NOT BE PERMITTED TO CONSOLIDATE INDIVIDUAL BRANCH CIRCUIT CONDUIT HOME RUNS EXCEPT AS FOLLOWS:
a: WHEN SHOWN ON DRAWINGS.
b: WITH PRIOR WRITTEN APPROVAL BY THE ENGINEER
c: FOR MULTIWIRE BRANCH CIRCUIT HOME RUNS PROVIDE 3#12 + 1#10 NEUTRAL AND 1#12 GROUND IN 3/4" MIN. CONDUIT. A HOME RUN SHALL CONSIST OF A MAX. OF 3 SEPARATE PHASE CONDUCTORS.

C. MOUNT DEVICE ABOVE COUNTERTOP, BACKSPLASH, OR LAVATORY. COORDINATE LOCATION AND MOUNTING HEIGHT WITH OTHER TRADES. MOUNTING HEIGHTS OTHER THAN 44" SHALL BE NOTED ON DRAWINGS.

D. QUANTITY AND LOCATION OF TAMPER AND FLOW SWITCHES IS FOR BIDDING PURPOSES ONLY. VERIFY EXACT QUANTITY AND LOCATIONS WITH SPRINKLER CONTRACTOR PRIOR TO FIRE ALARM SHOP DRAWING SUBMITTAL.

E. PROVIDE 2#10, 1#10, 3/4" C TO CONNECT TO SOURCE INDICATED

F. COMBINATION MAGNETIC MOTOR STARTERS SHALL BE NEMA SIZE 1 (UNO) WITH H.O.A. SWITCH AND RED PILOT LIGHT (RUNNING).

J. COORDINATE FINAL MOUNTING HEIGHT WITH VENDOR SUPPLIED EQUIPMENT IN SHOP DRAWINGS.

K. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

L. MOUNT AT HEIGHT INDICATED ON PLANS.

M. GROUND FAULT PROTECTION FOR EQUIPMENT VIA GFCI TYPE CIRCUIT BREAKER SERVING CIRCUIT IN PANELBOARD. REFER TO PANELBOARD SCHEDULES.

S. MAX MOUNTING HEIGHT 72" TO HIGHEST OPERABLE DEVICE.

T. FURNISHED AND INSTALLED BY OTHERS, WIRED BY DIV 26 CONTRACTOR

U. CONNECT RECEPTACLE TO "THROUGH-FEED" TERMINALS ON ADJACENT GFI RECEPTACLE. PROVIDE GFI STICKER ON COVERPLATE

V. WHEN REQUIRED TO BE WALL MOUNTED, INSTALL AT MOUNTING HEIGHT INDICATED ON LEGEND.

POWER SYMBOLS

SYMBOL	DESCRIPTION	MH	LEGEND NOTE
	CONDUIT CONCEALED ABOVE CEILING OR IN WALL	-	
	CONDUIT CONCEALED IN OR BELOW FLOOR, OR UNDER GROUND	-	
	BURIED GROUNDING CONDUCTOR	-	
AL1-1,3,5	TYPICAL HOME RUN INDICATES NUMBER OF CONDUCTORS IN CONDUIT TO BE USED AS A GENERAL GUIDE TO SHOW INTENT OF CIRCUITING AND SWITCHING ARRANGEMENT ...NOT SHOWN IN ALL CASES... CONTRACTOR SHALL VERIFY AND INSTALL ADDITIONAL CONDUCTOR WHERE REQUIRED PANEL AND CIRCUIT NO. DESIGNATION NOTED GROUND CONDUCTOR(S) NEUTRAL CONDUCTOR(S) PHASE CONDUCTOR(S)	-	B
X 2	20 AMP, 125 VOLT, DUPLEX RECEPTACLE WITH COVER PLATE MOUNTED VERTICALLY, X INDICATES RECEPTACLE TYPE, 2 ON THE SIDE INDICATES CIRCUIT NUMBER, U.N.O. NEMA 5-20R, UNO	16"	
#	20 AMP, 125 VOLT, DUPLEX RECEPTACLE WITH COVER PLATE MOUNTED VERTICALLY. A NUMBER IN FRONT INDICATES LOAD TYPE, SEE BELOW. NEMA 5-20R, UNO 2 TV, 250VA 3 COFFEE MAKER, 500VA 4 UNDERCOUNTER REFRIGERATOR, 600VA 5 REFRIGERATOR, 1000VA 6 MICROWAVE, 1500VA 7 COPY MACHINE, 1500VA 8 WASHING MACHINE, 1200 VA 9 WALL MOUNTED VIDEO PROJECTOR, 400 VA		A
	20 AMP DUPLEX RECEPTACLE WITH COVER PLATE, EXTRA LINE INDICATES MOUNTED HORIZONTALLY, NEMA 5-20R, UNO	16"	
	20 AMP DUPLEX RECEPTACLE WITH COVER PLATE, EXTRA LINE INDICATES MOUNTED HORIZONTALLY. DARK CENTER INDICATES MOUNTED ABOVE COUNTER TOP. NEMA 5-20R, UNO	44"	C
	20 AMP DUPLEX RECEPTACLE, DARK CENTER INDICATES MOUNTED ABOVE COUNTER TOP VERTICALLY, NEMA 5-20R, UNO	44"	C
	20 AMP SINGLE RECEPTACLE, NEMA 5-20R	16"	
30	SINGLE STRAIGHT BLADE RECEPTACLE, 30A, 125 VOLT, NEMA 5-30R	16"	
C	15 AMP SINGLE RECEPTACLE, SEMI-RECESSED WALL MOUNTED WITH CLOCK HANGER, NEMA 5-15R	76"	
	20 AMP DUPLEX RECEPTACLE FLUSH CEILING MOUNTED , NEMA 5-20R	CLG	
GF	20 AMP DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTING TYPE, NEMA 5-20R	16"	
GFT	20 AMP DUPLEX RECEPTACLE, NEMA 5-20R. CONNECT TO AN ADJACENT GF RECEPTACLE. DARK CENTER INDICATES MOUNTED ABOVE THE COUNTER.	44"	U
I	20 AMP DUPLEX RECEPTACLE, ISOLATED GROUND, ORANGE, NEMA 5-20R	16"	
WF	20 AMP DUPLEX RECEPTACLE FOR WASHFOUNTAIN/LAVATORY, NEMA 5-20R. CONNECT TO THROUGH FEED GFCI RECEPTACLE IN NEAREST RESTROOM.	-	J
S	20 AMP DUPLEX RECEPTACLE WITH SLIDING SAFETY GUARD, NEMA 5-20R	16"	
B	20 AMP DUPLEX RECEPTACLE WITH 20 AMP SINGLE POLE SWITCH IN 2 GANG BOX AND COMMON COVER PLATE, NEMA 5-20R	44"	
WC	20 AMP DUPLEX RECEPTACLE FOR ELECTRIC WATER COOLER, NEMA 5-20R. FEED FROM GFCI BREAKER IN PANELBOARD	-	J,M
V	20 AMP DUPLEX RECEPTACLE FOR VENDING MACHINE, NEMA 5-20R. FEED FROM GFCI BREAKER IN PANELBOARD.	16"	
WP	20 AMP DUPLEX RECEPTACLE, WEATHER RESISTANT GFCI, WITH IN-USE TYPE CLEAR WEATHERPROOF COVER HINGED AT TOP, NEMA 5-20R	16"	
X	20 AMP DUPLEX, EXPLOSION PROOF RECEPTACLE, UNO	16"	Q
E	20 AMP DUPLEX RED RECEPTACLE WITH COVER PLATE TO MATCH REST OF ROOM, NEMA 5-20R CONNECTED TO EMERGENCY POWER	16"	
	TWO 20 AMP DUPLEX RECEPTACLES WITH COMMON COVER PLATE (QUAD), NEMA 5-20R	16"	
C	TWO 20 AMP DUPLEX RECEPTACLES WITH COMMON COVER PLATE (QUAD), NEMA 5-20R FOR STUDENT COMPUTER FIXED CASEWORK WORKSTATION. REFER TO WORKSURFACE DETAILS AND ELEVATIONS ON THE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT APPLICABLE TO RECEPTACLE LOCATION.	-	K
GF	QUAD BOX WITH ONE 20 AMP DUPLEX,GROUND FAULT CIRCUIT INTERRUPTING TYPE RECEPTACLE AND ONE 20 AMP DUPLEX CONNECTED VIA THE "THROUGH FEED" TERMINAL ON GFI, WITH COMMON COVER PLATE, NEMA 5-20R	16"	
	TWO 20 AMP DUPLEX RECEPTACLES WITH COMMON COVER PLATE (QUAD). DARK CENTER INDICATES MOUNTED ABOVE COUNTER TOP, NEMA 5-20R	44"	C
R	TWO 20 AMP DUPLEX RED RECEPTACLES(QUAD), WITH COVER PLATE TO MATCH REST OF ROOM, NEMA 5-20R CONNECTED TO EMERGENCY POWER	16"	
	SPECIAL POWER RECEPTACLE, AMPS, VOLTS AND NEMA CONFIGURATION AS DEFINED ON PLANS BY CODED NOTE	16"	
	SINGLE STRAIGHT BLADE, SPECIAL RECEPTACLE, 20A, 125/250 VOLT, 3P, 4W, NEMA 14-20R	16"	
W	SINGLE STRAIGHT BLADE, WELDING RECEPTACLE, 60A, 250 VOLT, 3P, 3W, NEMA 15-60R	44"	
R	SINGLE STRAIGHT BLADE, RANGE RECEPTACLE, 50A, 125/250 VOLT, 3P, 4W, NEMA 14-50R	8"	
D	SINGLE STRAIGHT BLADE, GROUNDED DRYER RECEPTACLE, 30A, 125/250 VOLT, 3P, 4W, NEMA 14-30R	32"	
U	SINGLE STRAIGHT BLADE, UNGROUNDED DRYER RECEPTACLE, 30A, 125/250 VOLT, 3P, 3W, NEMA 10-30R	32"	
T	30 AMP, 120 VOLT, SINGLE TWIST LOCK RECEPTACLE, UNO, NEMA L5-30R	16"	
F	20 AMP DUPLEX RECEPTACLE IN FLUSH FLOOR MOUNTED BOX,NEMA 5-20R. USE A CAST BOX AT GRADE LEVEL, USE A STAMPED STEEL BOX FOR UPPER FLOORS	F	Q
T	20 AMP DUPLEX RECEPTACLE IN FIRE RATED POKE-THRU FLOOR DEVICE, NEMA 5-20R	F	Q
P	20 AMP DUPLEX RECEPTACLE IN PEDESTAL MOUNTED ABOVE FLOOR SERVICE FITTING, NEMA 5-20R	F	Q

POWER SYMBOLS

SYMBOL	DESCRIPTION	MH	LEGEND NOTE
	DISTRIBUTION PANEL, SEE ONE LINE DIAGRAM	-	S,P
	SURFACE CIRCUIT BREAKER PANELBOARD, SEE ONE LINE DIAGRAM	-	S,P
	FLUSH MOUNTED CIRCUIT BREAKER PANELBOARD, SEE ONE LINE DIAGRAM	-	S,P
M	UTILITY METER	-	
	PUSH BUTTON STATION, TYPE INDICATED	44"	
PC	PHOTOCELL AIMED NORTH	-	L
D	RECESSED WALL BOX FOR HAIR DRYER	-	E,K
H	RECESSED WALL BOX FOR HAND DRYER	-	E,K
CB	CIRCUIT BREAKER DISCONNECT SWITCH, 30A - 3P, UNO	48"	
	NON-FUSED DISCONNECT, 30 AMP - 3 POLE, UNO	48"	
100A-3P	NON-FUSED DISCONNECT, AMPERAGE AND QUANTITY OF POLES AS NOTED. -WP SUFFIX DESIGNATES NEMA 3R ENCLOSURE. -WP4X SUFFIX DESIGNATES NEMA 4X STAINLESS STEEL ENCLOSURE	48"	
F	FUSED DISCONNECT, 30 AMP - 3 POLE, UNO	48"	
F 100A-3P	FUSED DISCONNECT, AMPERAGE AND QUANTITY OF POLES AS NOTED. -WP SUFFIX DESIGNATES NEMA 3R ENCLOSURE. -WP4X SUFFIX DESIGNATES NEMA 4X STAINLESS STEEL ENCLOSURE	48"	
	MAGNETIC STARTER, 30 AMP - 3 POLE, NEMA SIZE 1, UNO	48"	F
	COMBINATION MAGNETIC MOTOR STARTER, WITH 30 AMP - 3 POLE CIRCUIT BREAKER DISCONNECT SWITCH, NEMA SIZE 1, UNO	48"	F
	COMBINATION MAGNETIC MOTOR STARTER, WITH 30 AMP - 3 POLE MOTOR CIRCUIT PROTECTOR (MCP) DISCONNECT SWITCH, NEMA SIZE 1, UNO	48"	F
	COMBINATION MAGNETIC MOTOR STARTER, WITH 30 AMP - 3 POLE FUSED DISCONNECT SWITCH, NEMA SIZE 1, UNO	48"	F
MP	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND PILOT LIGHT, UNO. FLUSH MOUNTED IN FINISH SPACES.	44"	
M	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION, UNO. FLUSH MOUNTED IN FINISH SPACES.	44"	
F	MANUAL MOTOR STARTER, NO OVERLOADS. FLUSH MOUNTED IN FINISH SPACES.	44"	
T	SPRING WOUND TIMER, HP RATED	44"	
C	CONTROL SWITCH FOR DEVICES SUCH AS MOTORIZED SHADES, SOLAR LIGHT TUBES, PROJECTION SCREENS, ETC. FURNISHED BY OTHERS, INSTALLED FLUSH MOUNTED WITH COVER PLATE AND WIRED BY DIV. 26	44"	
VFC	VARIABLE FREQUENCY CONTROLLER, PROVIDED BY DIV. 26 CONTRACTOR, UNO	60"	J, Q
ATS	AUTOMATIC TRANSFER SWITCH	60"	J, Q
TC	DIGITAL TIME CLOCK SWITCH	60"	
C	ELECTRICALLY HELD CONTACTOR, 30A - 3P, UNO	48"	J, Q
C	COMBINATION ELECTRICALLY HELD CONTACTOR, WITH 30 AMP - 3P CIRCUIT BREAKER DISCONNECT SWITCH, UNO	48"	J, Q
R	RELAY	-	
	MOTOR	-	
T	DRY TYPE TRANSFORMER	-	
SPD	SURGE PROTECTIVE DEVICE	-	Q
GAP	GENERATOR ANNUNCIATOR PANEL	56"	
	UTILITY POLE	-	
J	JUNCTION BOX	-	
J	JUNCTION BOX WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT	-	
	CEILING PADDLE FAN WITH JUNCTION BOX SECURELY MOUNTED TO STRUCTURE	CLG	
CP	CONTROL PANEL SUPPLIED BY VENDOR, INSTALLED AND WIRED BY CONTRACTOR	-	J
1	CODED NOTE SYMBOL		

1014
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DESIGN DEVELOPMENT	08/02/2019

ELECTRICAL LEGENDS AND SYMBOLS

E101.1

SCALE : AS INDICATED 8/1/2019 3:57:51 PM

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION	MH	LEGEND NOTE
HB	OCCUPANCY SENSOR - CEILING MOUNTED (UNO), HIGH BAY INFRARED, 360 DEGREE PATTERN, 36' DIA. COVERAGE PATTERN (MIN.) AT 20' MOUNTING HEIGHT. PROVIDE WITH RELAY OPTION.	CLG	
CO	OCCUPANCY SENSOR - CEILING MOUNTED, ULTRASONIC SENSOR FOR CORRIDOR/HALLWAY APPLICATIONS, 56'x16' (MIN.) RECTANGULAR SHAPED COVERAGE PATTERN. PROVIDE WITH RELAY OPTION. "A" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS.	CLG	
CT	OCCUPANCY SENSOR - CEILING MOUNTED, DUAL TECHNOLOGY, 360 DEGREE PATTERN, 2000 S.F. COVERAGE. PROVIDE WITH RELAY OPTION. "A" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS.	CLG	
CI	OCCUPANCY SENSOR - CEILING MOUNTED, INFRARED, 360 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION.	CLG	
CU	OCCUPANCY SENSOR - CEILING MOUNTED, ULTRASONIC, 360 DEGREE PATTERN, 2000 S.F. COVERAGE. PROVIDE WITH RELAY OPTION. "A" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS.	CLG	
CT	OCCUPANCY SENSOR - CEILING MOUNTED, DUAL TECHNOLOGY, DIRECTIONAL/180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION. PROVIDE WITH CEILING MOUNTING BRACKET ACCESSORY IF NOT SUPPLIED AS STANDARD WITH SENSOR. "A" PORTION OF SYMBOL INDICATES AIMING.	CLG	
CI	OCCUPANCY SENSOR - CEILING MOUNTED, INFRARED, DIRECTIONAL/180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION. PROVIDE WITH CEILING MOUNTING BRACKET ACCESSORY IF NOT SUPPLIED AS STANDARD WITH SENSOR. "A" PORTION OF SYMBOL INDICATES AIMING.	CLG	
WT	OCCUPANCY SENSOR - WALL MOUNTED, DUAL TECHNOLOGY, 180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION.	96"	
WI	OCCUPANCY SENSOR - WALL MOUNTED, INFRARED, 180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION.	96"	
ST	OCCUPANCY SENSOR - WALL SWITCH TYPE, DUAL TECHNOLOGY WITH MANUAL OVERRIDE SWITCH	44"	
SI	OCCUPANCY SENSOR - WALL SWITCH TYPE, INFRARED WITH MANUAL OVERRIDE SWITCH	44"	
P	OCCUPANCY SENSOR POWER SUPPLY/RELAY	-	
DS	DAYLIGHT SENSOR	CLG	
~~A~~K	KEY OPERATED SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~4K	KEYED 4-WAY SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~3K	3-WAY, KEYED SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~3	3-WAY SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~2	DOUBLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~4	4-WAY SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~MK	MOMENTARY CONTACT SNAP KEYED SINGLE POLE SWITCH, DOUBLE THROW, CENTER-OFF	44"	
~~A~~MC	MOMENTARY CONTACT SNAP SINGLE POLE SWITCH, DOUBLE THROW, CENTER-OFF	44"	
~~A~~L	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO WITH LIGHTED HANDLE	44"	
~~A~~	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO	44"	
~~A~~ a	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO TYPICAL, SUBSCRIPT a, b, c INDICATES WHICH LUMINAIRE THAT WILL BE CONTROLLED VIA SWITCH LEG	44"	
~~A~~P	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO WITH PILOT LIGHT	44"	
~~A~~D	WALL BOX DIMMER 277V, 1200 WATT MINIMUM, FLUSH, UNO. PROVIDE WATTAGE SIZE TO EXCEED CIRCUIT LOAD	44"	
LC	LIGHTING CONTACTOR, MECHANICALLY HELD, 30A - 3P, UNO	48"	
LC	COMBINATION LIGHTING CONTACTOR, MECHANICALLY HELD, WITH 30A - 3P CIRCUIT BREAKER, UNO	48"	

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	VOLT	LAMP	MANUFACTURER
L-1	6" DIAMETER SURFACE MOUNTED LED DOWNLIGHT WITH WHITE PAINTED FLANGE.	120V	LED 3000K 10W 1000 LUMENS	PHILLIPS: SLIM-SURFACE SERIES
L-2A	PENDANT MOUNTED CYLINDER - FINISH AND MOUNTING HEIGHT TO BE SELECTED BY ARCHITECT.	120V	LED 3000K 14W 1400 LUMENS	EUREKA: SCOUT 4049 SERIES
L-2B	WALL MOUNTED CYLINDER - FINISH AND MOUNTING HEIGHT TO BE SELECTED BY ARCHITECT.	120V	LED 3000K 14W 1400 LUMENS	EUREKA: SCOUT 3049 SERIES
L-3	SUSPENDED TRACK WITH FIXTURES AS SHOWN ON PLANS - FINISH AND MOUNTING HEIGHT TO BE SELECTED BY ARCHITECT.	120V	LED 3000K 18W 2200 LUMENS	EUREKA: FOCUS 2047 HEADS WITH ANATOMY TRACK PROVIDE ALTERNATE TO BE DELTA-LIGHT BOXY-R-AD SERIES
L-4	UNDERCABINET LIGHT - COORDINATE EXACT LENGTHS WITH ARCHITECT ELEVATIONS AND DETAILS	120V	LED 3000K 5W/FT	GM LIGHTING: LARCH SERIES
L-5	COMBINATION BATH EXHAUST/LIGHT - BID AS ALTERNATE INSTEAD OF CONNECTION TO EF-1	120V	LED 3000K RW SCREW IN LAMP	DELTA: SIGRO-110LED SERIES
L-6	24" SURFACE MOUNTED VANITY LIGHT ABOVE MIRROR. COORDINATE EXACT LOCATION WITH ARCHITECT.	120V	LED 3000K 11W 900 LUMENS	EUREKA: 3542 SERIES
L-10	MONOPOINT MOUNTED PENDANT FIXTURE - FINISHES AND MOUNTING HEIGHT TO BE SELECTED BY ARCHITECT.	120V	LED 3000K 37W 3000 LUMENS	KICHLER: PD9117 SERIES
L-11	4' LENGTH WALL MOUNTED STAIRWELL FIXTURE WITH BUILT IN OCCUPANCY SENSOR AND DIMMER DOWN TO 10%	120V	LED 3000K 28W 3000 LUMENS	LITHONIA: WL SERIES
F4	4' LENGTH CHAIN HUNG INDUSTRIAL FIXTURE WITH LENS	120V	LED 3000K 25W 3000 LUMENS	LITHONIA: ZLIN SERIES
EBU	POLYCARBONATE SURFACE MOUNTED EMERGENCY BATTERY UNIT WITH WHITE FINISH AND EMERGENCY BATTERY PACK CAPABLE OF FULL WATTAGE OUTPUT FOR A MINIMUM OF 90 MINUTES.	120V/277V	2-5.4 WATT LED LAMPS.	LITHONIA: ELM/LT SERIES OR EQUAL
X	DIE CAST ALUMINUM LED EXIT SIGN WITH UNIVERSAL MOUNTING, 6" HIGH WITH 3/4" STROKE RED LETTER, WHITE FINISH, AND EMERGENCY BATTERY PACK CAPABLE OF OPERATING EXIT WITH FULL INTENSITY FOR A MINIMUM OF 90 MINUTES. PROVIDE SELF DIAGNOSTICS. PROVIDE STEM MOUNTING FOR ALL AREAS THAT EXCEED 12FT IN HEIGHT AND WALL MOUNT IS NOT AN OPTION.	120V/277V	L.E.D.	LITHONIA: LE SERIES OR EQUAL

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ELECTRICAL LEGENDS AND SYMBOLS

E101.2

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GENERAL POWER NOTES:
1. ALL ELECTRICAL DEVICES AND ASSOCIATED OUTLET BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED. ALL CONDUIT AND WIRING SHALL BE CONCEALED WHERE PHYSICALLY POSSIBLE, SURFACE RACEWAY SHALL ONLY BE PERMITTED WHERE NOTED.

2. PROVIDE (1) NO. 10 AWG NEUTRAL CONDUCTOR FOR ANY 20 AMP SINGLE PHASE CIRCUITS SHARING A NEUTRAL IN A SINGLE CONDUIT. WHERE MULTIWIRE BRANCH CIRCUITS ARE USED, PROVIDE SIMULTANEOUS DISCONNECTING MEANS IN PLACE OF SINGLE POLE BREAKERS.

3. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAYS ALONG WITH PHASE CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS. CONDUIT IS NOT PERMITTED TO ACT AS AN EQUIPMENT GROUNDING CONDUCTOR UNLESS NOTED. AN ISOLATED GROUND CONDUCTOR (GREEN/WHITE) IS REQUIRED FOR ALL ISOLATED GROUND CIRCUITS.

4. WHEREVER 4 OR MORE CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY, E.C. SHALL INCREASE CONDUCTOR SIZE AS REQUIRED FOR DERATING PER NEC 315.B.2.9.

5. GROUND FAULT INTERRUPTING DEVICES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND NOT ALLOWED BEHIND FIXED IN PLACE OR UNMOVABLE EQUIPMENT. REMOTE DEVICES MAY BE REQUIRED.

6. ALL CIRCUITS SHALL USE A MINIMUM OF 12 AWG FOR 20 AMP CIRCUITS UNLESS OTHERWISE NOTED. ELECTRICAL CONTRACTOR SHALL CONFIRM CONDUCTOR AND CONDUIT SIZES FOR VOLTAGE DROP, A MAXIMUM OF 3% FOR BRANCH AND FEEDER AND 5% OVERALL.

7. COORDINATE WITH OTHER TRADES FOR ANY ELECTRICAL DEVICE LOCATIONS PRIOR TO ROUGH-IN. COMPLY WITH ALL APPLICABLE CODES FOR PROPER MOUNTING HEIGHTS, NFPA, NEC, ADA, ETC.

8. WHERE LOW VOLTAGE DEVICES AND RECEPTACLES ARE SHOWN NEXT TO EACH OTHER, INSTALL AS CLOSE AS POSSIBLE, DO NOT SCALE DRAWINGS.

9. ALL "SPECIAL SYSTEMS" WIRING AND DEVICES (IE. TELEPHONE, DATA, TV,) SHALL BE PROVIDED AND INSTALLED BY OTHERS UNLESS NOTED ON PLANS OR SPECIFICATIONS. E.C. TO PROVIDE BOXES AND RACEWAYS PER LEGEND AND SPECIFICATIONS. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER/SUPPLIER.

10. ALL DISCREPANCIES WITH THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION PRIOR TO BIDS. IN OTHERWISE DOING SO, THE ELECTRICAL CONTRACTOR SHALL BE LIABLE FOR ANY REQUIRED REVISIONS.

11. E.C. TO COORDINATE EXACT EQUIPMENTS OF ALL OTHER SYSTEMS WITH MANUFACTURER AND OTHER TRADES PRIOR TO ROUGH-IN AND PURCHASE OF ANY ELECTRICAL EQUIPMENT ASSOCIATED WITH SYSTEM. ANY DISCREPANCIES WITH THIS PLAN AND MANUFACTURER REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO PURCHASE OR ELECTRICAL ROUGH-IN OF THIS EQUIPMENT.

12. ALL ITEMS SHOWN ON PLAN ARE NEW UNLESS MARKED AS (E) FOR EXISTING OR (R) FOR RELOCATED.

GENERAL LIGHTING NOTES:
1. FOR LUMINAIRES INFORMATION, REFER TO LUMINAIRES SCHEDULE UNLESS OTHERWISE NOTED.

2. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LUMINAIRES PRIOR TO INSTALLATION. COORDINATE ALL CEILING TRIMS AND MOUNTING HARDWARE WITH ARCHITECTURAL AND STRUCTURAL TRADES.

3. REFER TO ARCHITECTURAL DETAILS FOR ALL MOUNTING HEIGHTS OF LUMINAIRES IN EXPOSED CEILING AREAS . COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS TO AVOID INTERFERENCE WITH MECHANICAL DUCTWORK, PIPING AND STRUCTURAL STEEL.

4. ALL EMERGENCY AND EXIT LIGHTS SHALL BE CONNECTED TO LOCAL LIGHTING CIRCUIT AHEAD OF CONTROLS, UNLESS OTHERWISE STATED. FOR LUMINAIRES SHOWN AS EMERGENCY (EM ONLY), POWER LOSS SENSING LEAD TO BE CONNECTED AHEAD OF CONTROL AND LUMINAIRES TO BE SWITCHED.

5. LUMINAIRES SHOWN AS NIGHT LIGHTS (NL ONLY) SHALL REMAIN ON 24 HOURS AND SHALL BE CONNECTED TO LOCAL CIRCUIT AHEAD OF CONTROL (UNLESS OTHERWISE NOTED).

6. LUMINAIRES SHOWN AS NL/EM OR EM/NL SHALL BE WIRED WITH EMERGENCY BATTERY AND SHALL REMAIN ON 24 HOURS CONNECTED TO LOCAL CIRCUIT AHEAD OF CONTROL (UNLESS OTHERWISE NOTED).

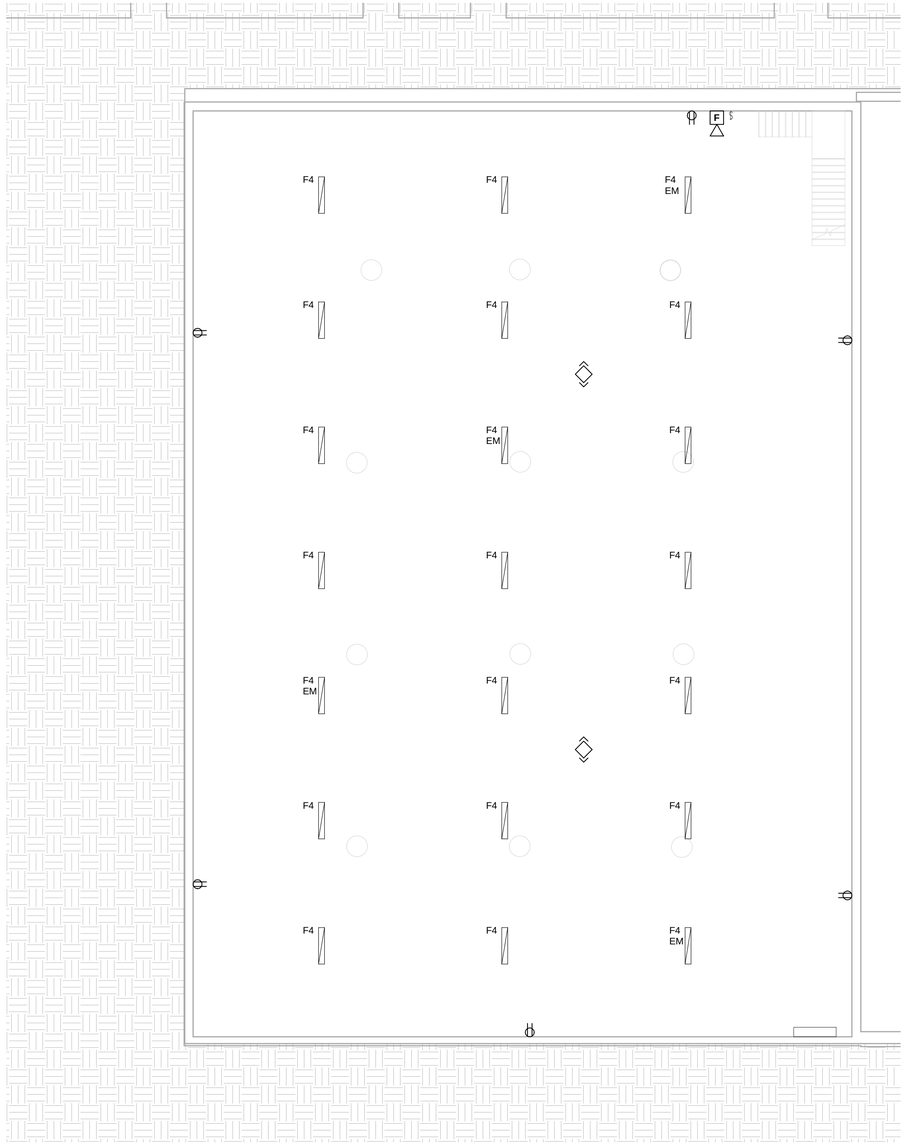
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9. ELECTRICAL CONTRACTOR TO INCLUDE COST FOR FUNCTIONAL TESTING FOR LIGHTING CONTROLS AND SHALL BE PERFORMED BY A THIRD PARTY COMMISSIONING AGENT NOT RESPONSIBLE FOR THE DESIGN. VERIFY THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA PER ASHREA 2013 9.4.3

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1 BASEMENT ELECTRICAL PLAN
1/8" = 1'-0"

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST, SUITE 700
DETROIT, MI 48226

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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08/02/2019

BASEMENT ELECTRICAL PLAN

E201.0

SCALE : AS INDICATED 8/1/2019 3:58:02 PM

GENERAL LIGHTING NOTES:
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2. PROVIDE (1) NO. 10 AWG NEUTRAL CONDUCTOR FOR ANY 20 AMP SINGLE PHASE CIRCUITS SHARING A NEUTRAL IN A SINGLE CONDUIT. WHERE MULTIWIRE BRANCH CIRCUITS ARE USED, PROVIDE SIMULTANEOUS DISCONNECTING MEANS IN PLACE OF SINGLE POLE BREAKERS.

3. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAYS ALONG WITH PHASE CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS. CONDUIT IS NOT PERMITTED TO ACT AS AN EQUIPMENT GROUNDING CONDUCTOR UNLESS NOTED. AN ISOLATED GROUND CONDUCTOR (GREEN/WHITE) IS REQUIRED FOR ALL ISOLATED GROUND CIRCUITS.

4. WHEREVER 4 OR MORE CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY, E.C. SHALL INCREASE CONDUCTOR SIZE AS REQUIRED FOR DERATING PER NEC 315.B.2.9.

5. GROUND FAULT INTERRUPTING DEVICES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND NOT ALLOWED BEHIND FIXED IN PLACE OR UNMOVABLE EQUIPMENT. REMOTE DEVICES MAY BE REQUIRED.

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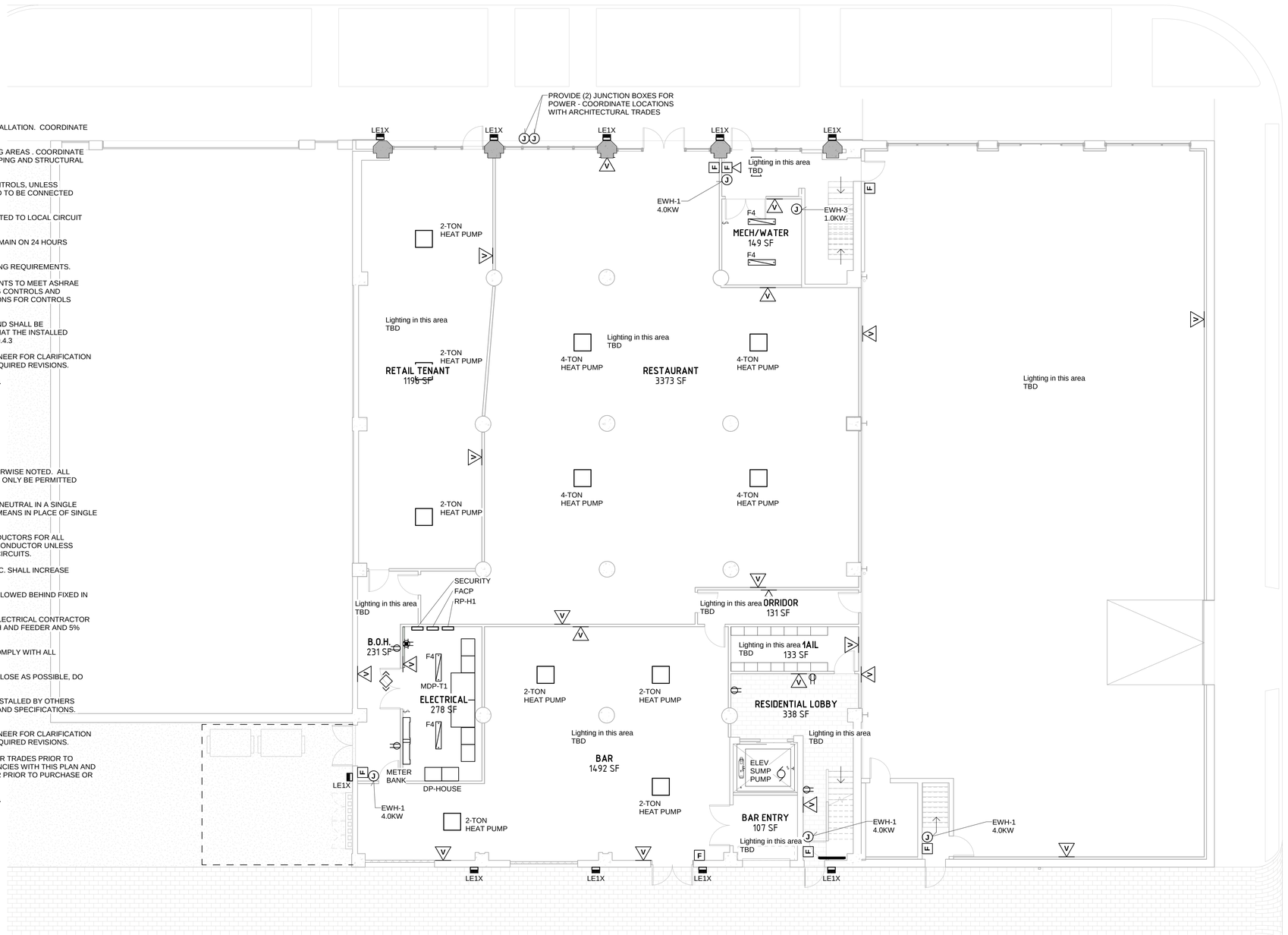
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1014
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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08/02/2019

FIRST FLOOR ELECTRICAL PLAN

E201.1

SCALE : AS INDICATED 8/1/2019 3:58:09 PM

GENERAL POWER NOTES:
1. ALL ELECTRICAL DEVICES AND ASSOCIATED OUTLET BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED. ALL CONDUIT AND WIRING SHALL BE CONCEALED WHERE PHYSICALLY POSSIBLE, SURFACE RACEWAY SHALL ONLY BE PERMITTED WHERE NOTED.

2. PROVIDE (1) NO. 10 AWG NEUTRAL CONDUCTOR FOR ANY 20 AMP SINGLE PHASE CIRCUITS SHARING A NEUTRAL IN A SINGLE CONDUIT. WHERE MULTIWIRE BRANCH CIRCUITS ARE USED, PROVIDE SIMULTANEOUS DISCONNECTING MEANS IN PLACE OF SINGLE POLE BREAKERS.

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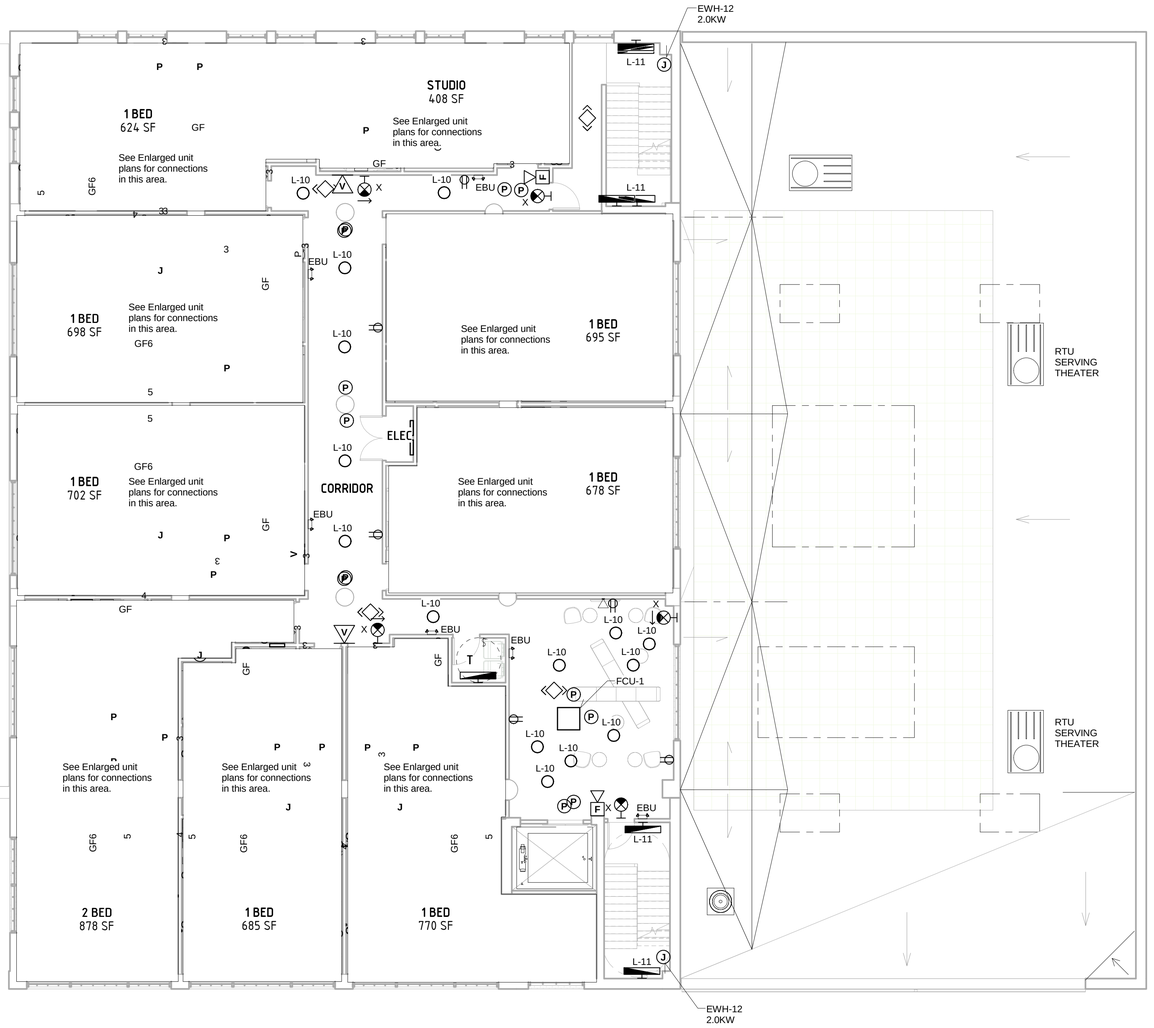
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8. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE LIGHTING CONTROL REQUIREMENTS TO MEET ASHRAE 2013 90.1 WITH SELECTED PRODUCT MANUFACTURE FOR ALL OCCUPANCY/VACANCY SENSORS, DIMMING CONTROLS AND DAYLIGHT SENSORS REQUIRED. MANUFACTURE TO PROVIDE DOCUMENTS FOR LAYOUT AND CONNECTIONS FOR CONTROLS USING A WIRED OR WIRELESS SYSTEM.

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1 2ND FLOOR ELECTRICAL PLAN
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1014
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2857; 2863
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DRAWING ISSUE	DATE
DESIGN DEVELOPMENT	08/02/2019

2ND FLOOR ELECTRICAL PLAN

E201.2

SCALE : AS INDICATED 8/1/2019 3:58:16 PM

GENERAL POWER NOTES:
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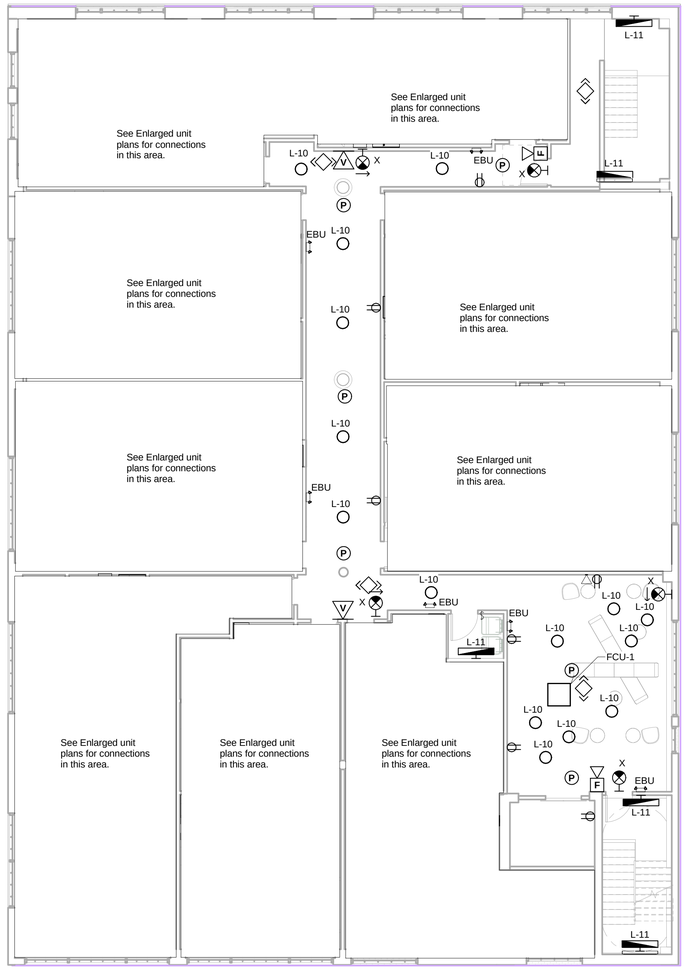
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DESIGN DEVELOPMENT	08/02/2019

3RD FLOOR ELECTRICAL PLAN

E201.3

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GENERAL POWER NOTES:

1. ALL ELECTRICAL DEVICES AND ASSOCIATED OUTLET BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED. ALL CONDUIT AND WIRING SHALL BE CONCEALED WHERE PHYSICALLY POSSIBLE, SURFACE RACEWAY SHALL ONLY BE PERMITTED WHERE NOTED.

2. PROVIDE (1) NO. 10 AWG NEUTRAL CONDUCTOR FOR ANY 20 AMP SINGLE PHASE CIRCUITS SHARING A NEUTRAL IN A SINGLE CONDUIT. WHERE MULTIWIRE BRANCH CIRCUITS ARE USED, PROVIDE SIMULTANEOUS DISCONNECTING MEANS IN PLACE OF SINGLE POLE BREAKERS.

3. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAYS ALONG WITH PHASE CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS. CONDUIT IS NOT PERMITTED TO ACT AS AN EQUIPMENT GROUNDING CONDUCTOR UNLESS NOTED. AN ISOLATED GROUND CONDUCTOR (GREEN/WHITE) IS REQUIRED FOR ALL ISOLATED GROUND CIRCUITS.

4. WHEREVER 4 OR MORE CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY, E.C. SHALL INCREASE CONDUCTOR SIZE AS REQUIRED FOR DERATING PER NEC 315.B.2.9.

5. GROUND FAULT INTERRUPTING DEVICES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND NOT ALLOWED BEHIND FIXED IN PLACE OR UNMOVABLE EQUIPMENT. REMOTE DEVICES MAY BE REQUIRED.

6. ALL CIRCUITS SHALL USE A MINIMUM OF 12 AWG FOR 20 AMP CIRCUITS UNLESS OTHERWISE NOTED. ELECTRICAL CONTRACTOR SHALL CONFIRM CONDUCTOR AND CONDUIT SIZES FOR VOLTAGE DROP, A MAXIMUM OF 3% FOR BRANCH AND FEEDER AND 5% OVERALL.

7. COORDINATE WITH OTHER TRADES FOR ANY ELECTRICAL DEVICE LOCATIONS PRIOR TO ROUGH-IN. COMPLY WITH ALL APPLICABLE CODES FOR PROPER MOUNTING HEIGHTS, NFPA, NEC, ADA, ETC.

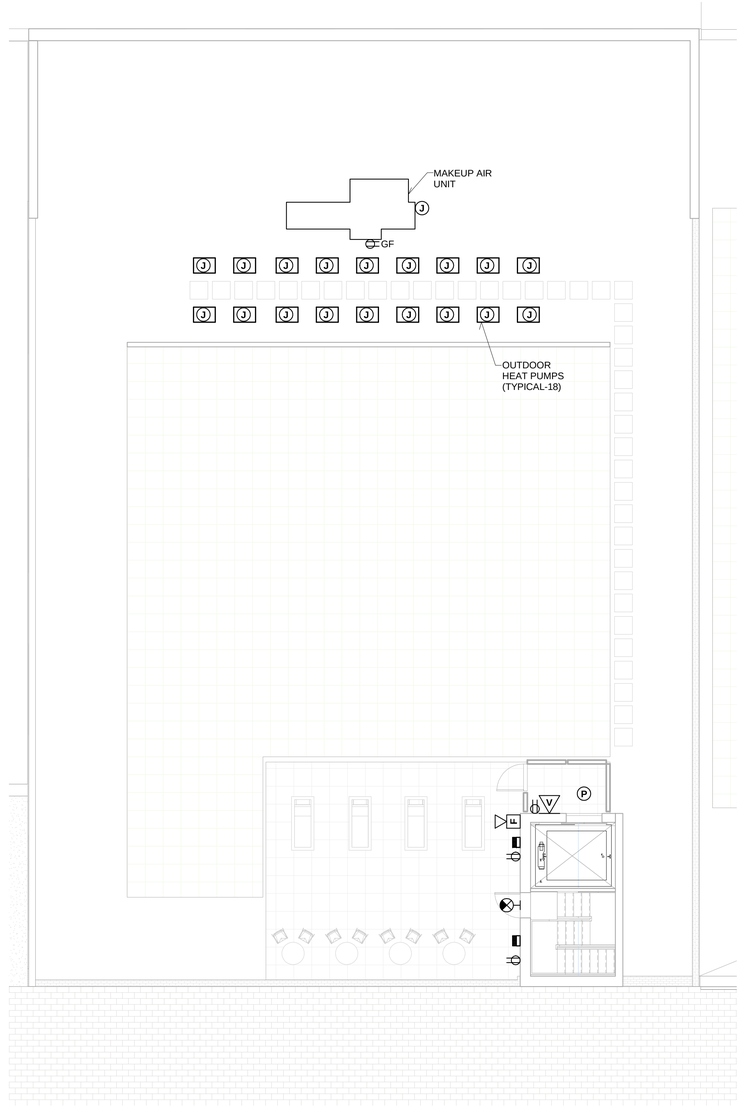
8. WHERE LOW VOLTAGE DEVICES AND RECEPTACLES ARE SHOWN NEXT TO EACH OTHER, INSTALL AS CLOSE AS POSSIBLE, DO NOT SCALE DRAWINGS.

9. ALL "SPECIAL SYSTEMS" WIRING AND DEVICES (IE. TELEPHONE, DATA, TV,) SHALL BE PROVIDED AND INSTALLED BY OTHERS UNLESS NOTED ON PLANS OR SPECIFICATIONS. E.C. TO PROVIDE BOXES AND RACEWAYS PER LEGEND AND SPECIFICATIONS. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER/SUPPLIER.

10. ALL DISCREPANCIES WITH THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION PRIOR TO BIDS. IN OTHERWISE DOING SO, THE ELECTRICAL CONTRACTOR SHALL BE LIABLE FOR ANY REQUIRED REVISIONS.

11. E.C. TO COORDINATE EXACT EQUIPMENTS OF ALL OTHER SYSTEMS WITH MANUFACTURER AND OTHER TRADES PRIOR TO ROUGH-IN AND PURCHASE OF ANY ELECTRICAL EQUIPMENT ASSOCIATED WITH SYSTEM. ANY DISCREPANCIES WITH THIS PLAN AND MANUFACTURER REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO PURCHASE OR ELECTRICAL ROUGH-IN OF THIS EQUIPMENT.

12. ALL ITEMS SHOWN ON PLAN ARE NEW UNLESS MARKED AS (E) FOR EXISTING OR (R) FOR RELOCATED.



1 ROOF ELECTRICAL PLAN
1/8" = 1'-0"

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST, SUITE 700
DETROIT, MI 48226

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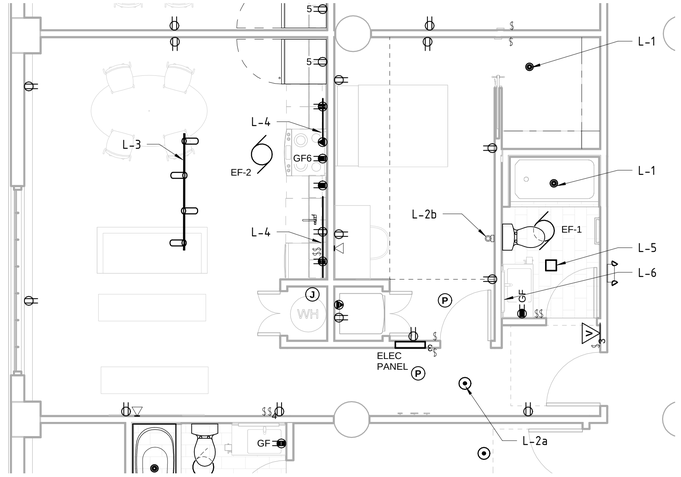
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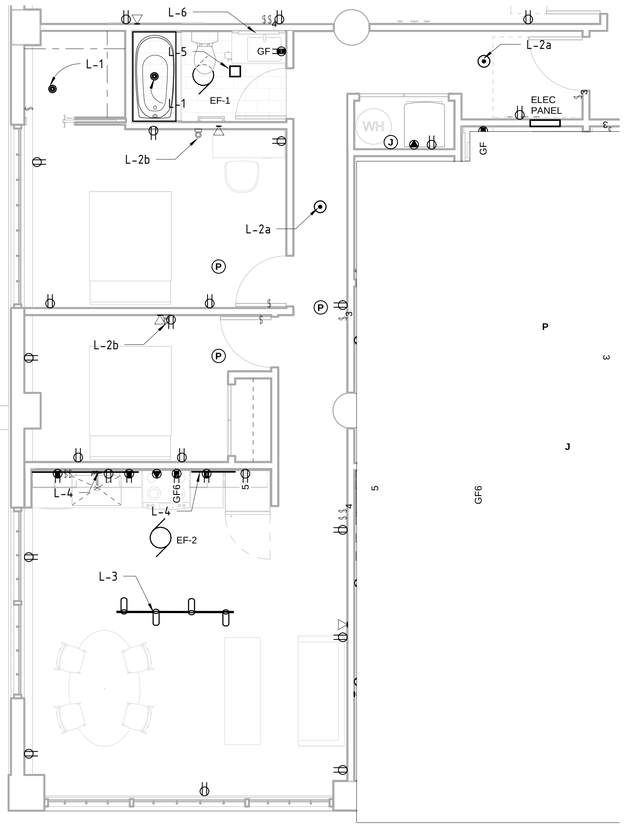
ROOF ELECTRICAL PLAN

E201.4

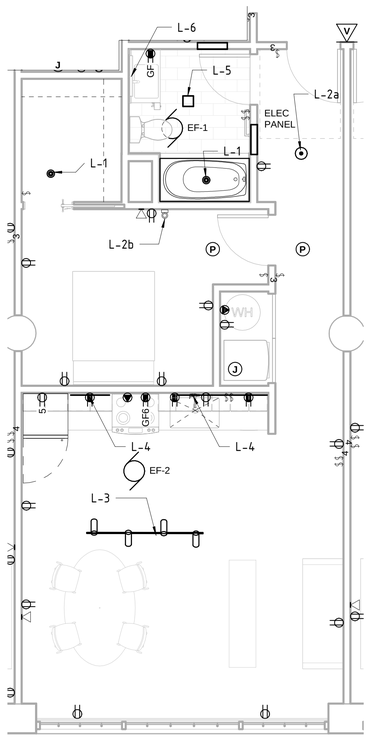
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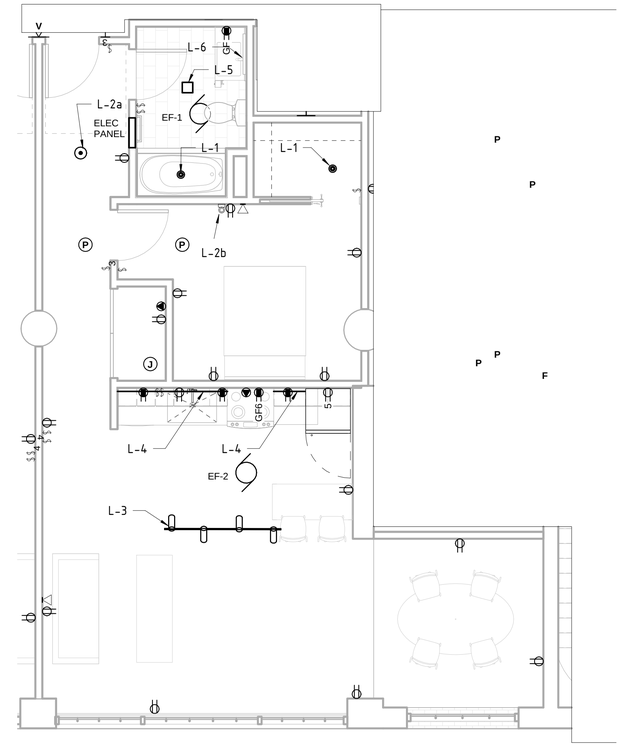
1 UNIT 1 FLOORPLAN
1/4" = 1'-0"



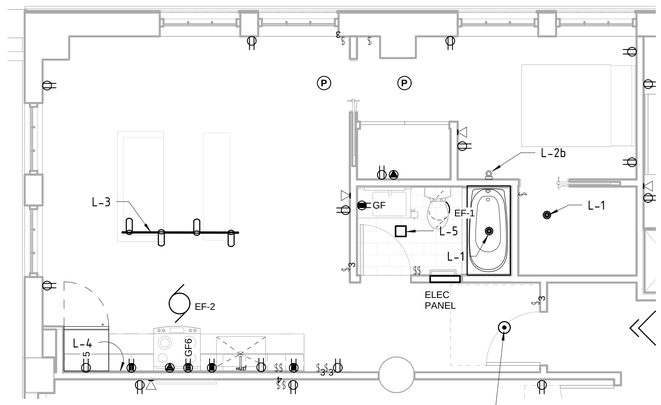
2 UNIT 2 FLOORPLAN
1/4" = 1'-0"



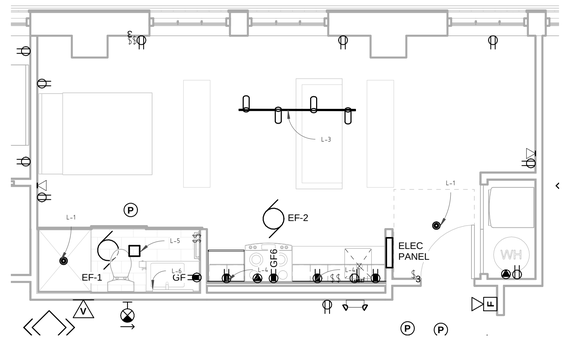
3 UNIT 3 FLOORPLAN
1/4" = 1'-0"



4 UNIT 4 FLOORPLAN
1/4" = 1'-0"



5 UNIT 5 FLOORPLAN
1/4" = 1'-0"



6 UNIT 6 FLOORPLAN
1/4" = 1'-0"

1014
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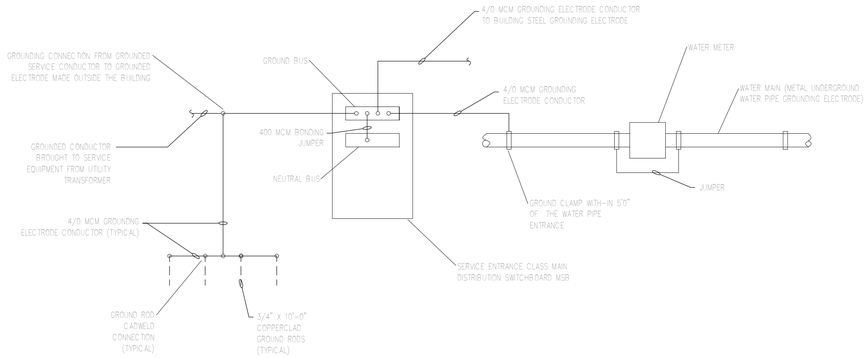
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ENLARGED ELECTRICAL PLANS

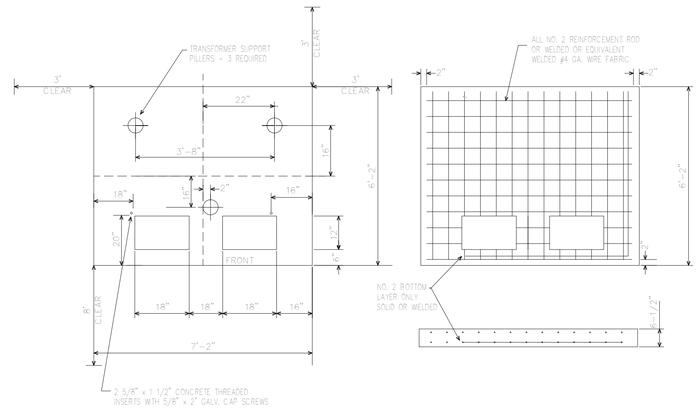
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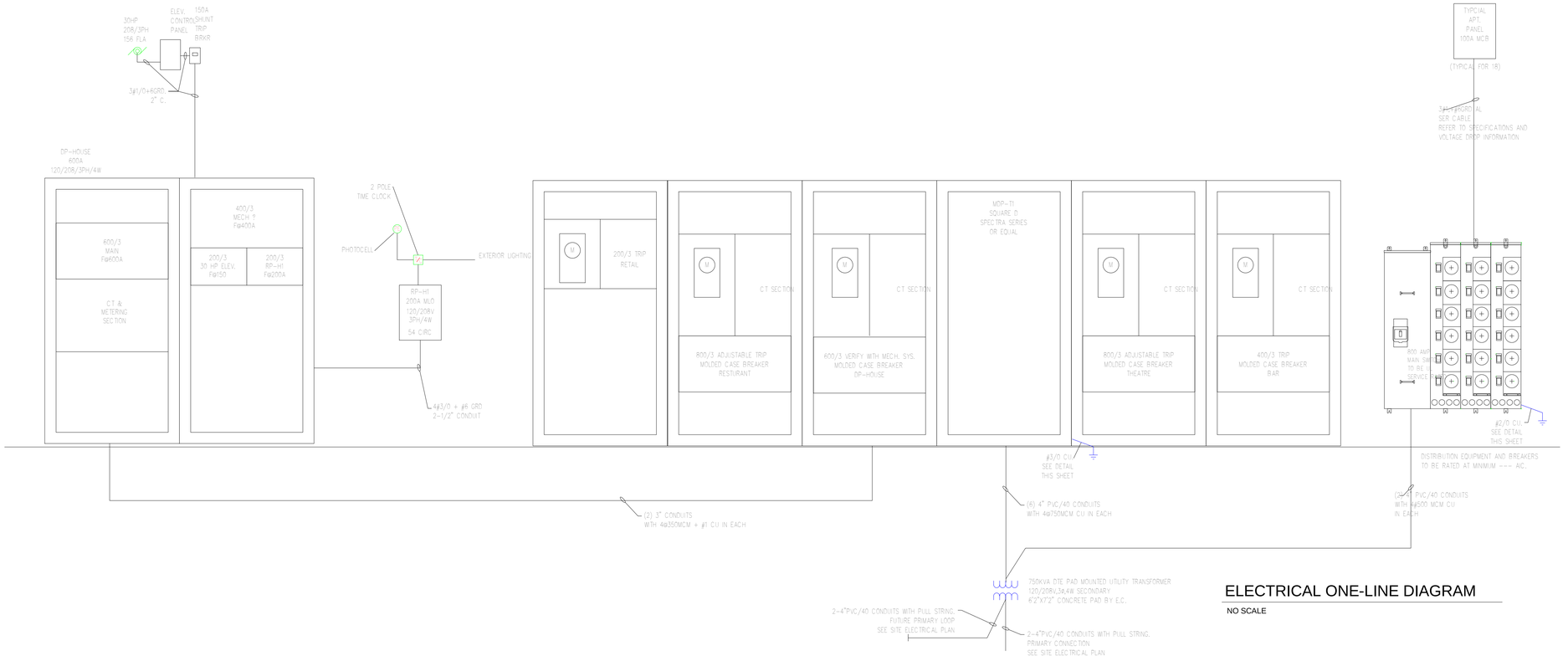
2 SYSTEM GROUNDING CONNECTIONS DETAIL

NO SCALE



GENERAL NOTES:

1. SWEEPS MUST BE 4" RIGID CONDUIT OR I.M.C. WITH A MIN. 36" RADIUS BEND.
2. CONCENTRATION: 6 BAGS OF CEMENT PER YARD.
3. MAINTAIN CONCRETE COVER CLEARANCES BETWEEN REINFORCEMENT RODS AND SURFACES SHOWN.
4. CONCRETE PAD SELECTION WILL BE DETERMINED BY DTE ENERGY SERVICE PLANNER PRIOR TO INSTALL.
5. PRIMARY CONDUIT MUST BE POSITIONED AT THE FRONT OF THE PRIMARY WINDOW AS SHOWN.
6. NUMBER OF CONDUITS IS TO BE APPROVED BY THE DTE ENERGY SERVICE PLANNER.
7. IF CONDUCTORS ARE NOT PULLED IN ALL SECONDARY SERVICE CONDUITS, THE UNUSED CONDUIT SHOULD BE AT THE FRONT POSITION.



ELECTRICAL ONE-LINE DIAGRAM

NO SCALE

1014

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DESIGN DEVELOPMENT	08/02/2019

ELECTRICAL ONE-LINE DIAGRAM

E601.1

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ROOFTOP UNIT SCHEDULE

MARK	AREA SERVED	SUPPLY FAN SECTION					MOTOR DATA			EVAPORATOR SECTION (DX) BASED ON 95°F AMBIENT						COMPRESSOR DATA			COND. FAN		HEATING SECTION					PREFILTER SECTION			RETURN/POWER EXH SECTION						ELECTRICAL (AMPS)					
		SUPPLY CFM	MIN. O.A. CFM	SUPPLY E.S.P.	TOTAL E.S.P.	FAN RPM	BHP	HP	VOLTS PHASE	TOTAL MBH	SENSIBLE MBH	EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	LAT (°F) WB	MIN SF/ ROWS/FPI	NO.	TYPE	NO. STEPS	NO.	HP EACH	INPUT MBH	OUTPUT MBH	EAT °F	LAT °F	TYPE	SIZE	EFF.	C.F.M.	E.S.P.	MOTOR R.P.M.	BHP	HP	NOM. TONS	FLA	MCA	MOP	WGT. LBS	MANUFACTURER & MODEL NUMBER	ACCESSORIES (SEE BELOW)
RTU-1	THEATER	3000	870	0.8"	–	–	–		208/3	118.1	97.0					–	2	SCROLL	2							MERV 8	2"	30%						10.0	..	54	80	1000	TRANE – YSC120	1–21
RTU-2	THEATER	4000	1160	0.8"	–	–	–		208/3	93.5	74.4					–	2	SCROLL	2							MERV 8	2"	30%						7.5	..	38	60	900	TRANE – YHC090	1–21
RTU-3	THEATER	3000	870	0.8"	–	–	–		208/3	118.1	97.0					–	2	SCROLL	2							MERV 8	2"	30%						10.0	..	54	80	1000	TRANE – YSC120	1–21

ACCESSORIES:
1. UNIT CAPACITIES SHALL BE BASED ON ABOVE DATA.
2. THERMOSTATICALLY CONTROLLED CRANKCASE HEATER.
3. FILTER DRYER ON COMPRESSOR REFRIGERANT SYSTEM.
4. PROVIDE WITH 7–DAY PROGRAMMABLE REMOTE T–STAT. (COORDINATE WITH TCC)
5. R–410 REFRIGERANT
6. 5–YEAR COMPRESSOR WARRANTY.
7. ANTI–SHORT CYCLING CONTROLS ON COMPRESSOR.
8. HIGH & LOW PRESSURE SWITCHES ON REFRIGERANT SYSTEMS.
9. PROVIDE WITH SINGLE DISCONNECT BY RTU MANU.
10. CONSTANT AIR VOLUME SYSTEM (BELT DRIVE)
11. ALUMINIZED HEAT EXCHANGER – STAGED HEAT
12. PROVIDE S/S CONDENSATE DRAIN PAN.
13. PROVIDE WITH DOWNFLOW
14. HINGED ACCESS DOORS
15. SCROLL COMPRESSOR.
16. PROVIDE WITH VERTICAL VENT EXTENSION KIT.
17. ALUMINIZED GAS HEAT EXCHANGER
18. POWER EXHAUST.
19. PROVIDE WITH 18" H. INSULATED FLAT FILTERED ROOF CURB (COORD WITH ROOF PITCH).
20. PROVIDE WITH ENTHALPY ECONOMIZER
21. PROVIDE WITH BAROMETRIC RELIEF

DEDICATED OUTSIDE AIR UNIT SCHEDULE

| MARK | AREA SERVED | SUPPLY FAN SECTION | | | | | MOTOR DATA | | | EVAPORATOR SECTION (DX) BASED ON 95°F AMBIENT | | | | | | | COMPRESSOR DATA | | | | COND. FAN | | HEATING SECTION | | | | FILTER SECTION | | | RETURN/POWER EXH SECTION | | | | | | ELECTRICAL (AMPS) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SUPPLY CFM | MIN. O.A. CFM | SUPPLY E.S.P. | TOTAL E.S.P. | FAN RPM | BHP | HP | VOLTS PHASE | TOTAL MBH | SENSIBLE MBH | EAT (°F) DB | EAT (°F) WB | LAT (°F) DB | LAT (°F) WB | MIN SF/ ROWS/FPI | NO. | TYPE | NO. STEPS | NO. | HP EACH | INPUT MBH | OUTPUT MBH | EAT °F | LAT °F | TYPE | SIZE | EFF. | C.F.M. | E.S.P. | MOTOR R.P.M. | BHP | HP | NOM. TONS | FLA | MCA | MOP | WGT. LBS | MANUFACTURER & MODEL NUMBER | ACCESSORIES (SEE BELOW) |
| DOAU-1 | SEE DWGS | 1040 | 1040 | 0.85" | – | 1345 | 0.51 | 3/4 | 208/3 | 52.7 | 27.3 | 90.3 | 76.9 | 66.5 | 63.8 | – | 1 | DIGITAL SCROLL | 1 | 1 | – | 100 | 80 | 0 | 73 | MERV 8 | 2" | 30% | – | – | – | – | – | 4.0 | .. | 27 | 40 | 1800 | GREENHECK IGX–108–H12–4–C | 1–10, 12–17, 19–21 |

ACCESSORIES:
1. UNIT CAPACITIES SHALL BE BASED ON ABOVE DATA.
2. THERMOSTATICALLY CONTROLLED CRANKCASE HEATER.
3. FILTER DRYER ON COMPRESSOR REFRIGERANT SYSTEM.
4. PROVIDE WITH 7–DAY PROGRAMMABLE REMOTE T–STAT. (COORDINATE WITH TCC)
5. R–410 REFRIGERANT
6. 5–YEAR COMPRESSOR WARRANTY.
7. ANTI–SHORT CYCLING CONTROLS ON COMPRESSOR.
8. HIGH & LOW PRESSURE SWITCHES ON REFRIGERANT SYSTEMS.
9. PROVIDE WITH SINGLE DISCONNECT BY MANU.
10. CONSTANT AIR VOLUME SYSTEM (BELT DRIVE)
11. DIGITAL MODULATING SCROLL COMPRESSOR
12. PROVIDE S/S CONDENSATE DRAIN PAN.
13. PROVIDE WITH DOWNFLOW
14. HINGED ACCESS DOORS
15. SCROLL COMPRESSOR.
16. PROVIDE WITH VERTICAL VENT EXTENSION KIT.
17. OUTSIDE AIR INTAKE HOOD AND MOTORIZED DAMPER
18. DOUBLE WALL
19. PROVIDE WITH 18" H. INSULATED FLAT FILTERED ROOF CURB (COORD WITH ROOF PITCH).

ELECTRIC WALL HEATER SCHEDULE

MARK	LOCATION	TYPE	KW	VOLTS/ PHASE	AMPS	FAN		MOTOR HP	MARKEL MODEL NO.
						R.P.M.	CFM		
EWH–1	SEE PLANS	WALL	4.0	208/3	–	1400	245	PER MFG	J3424T
EWH–2	SEE PLANS	WALL	2.0	208/1	–	1400	245	PER MFG	F3422T
EWH–3	SEE PLANS	WALL	1.0	115/1	–	1400	245	PER MFG	E3322TD–RP

NOTES:
1. PROVIDE ALL ACCESSORIES FOR MOUNTING.
2. PROVIDE UNIT WITH FACTORY INSTALLED DISCONNECT SWITCH AND REMOTE THERMOSTAT.
3. UNIT SHALL BE U.L. LISTED.
4. COORDINATE COLOR WITH ARCHITECTURAL DRAWINGS/ARCHITECT.

EXHAUST FAN SCHEDULE

MARK	AREA SERVED	C.F.M.	E.S.P.	FAN RPM	TYPE	MOTOR				TYPE DRIVE	WGT. LBS.	INTERLOCKED WITH	MAKE & MODEL NO.	NOTES
						HP	VOLTS/W	PHASE	FREQ (HZ)					
EF–1	TOILET ROOMS	20	0.30	–	CEILING EXHAUST FAN/ RADIATION DAMPER	12.5 W	115	1	60	DIRECT	60	24/7	DELTA BREEZ – GBR80–CRD	A–D
EF–2	KITCHENS	25	0.30	–	CEILING EXHAUST FAN/ RADIATION DAMPER	12.5 W	115	1	60	DIRECT	60	24/7	DELTA BREEZ – GBR80–CRD	A–D

NOTES:
A. PROVIDE W/ SAFETY DISCONNECT SWITCH
B. PROVIDE W/ GRAVITY BACKDRAFT DAMPER
C. UNIT SHALL HAVE AMCA SEAL & BE U.L. CERTIFIED
D. PROVIDE ALL ACCESSORIES REQUIRED FOR CEILING MOUNT WITH CRD. PROVIDE ALL CONTROLS PER MANUFACTURE. PROVIDE SSR SPEED CONTROL SWITCH.

OUTDOOR UNIT HEAT PUMP SCHEDULE

GENERAL NOTES
(1) NOMINAL COOLING CAPACITY BASED ON 95.0°F OUTDOOR AIR
(2) NOMINAL HEATING CAPACITY BASED ON 47.0°F OUTDOOR AIR
(3) PREMIUM EFFICIENCY DIRECT DRIVE MOTOR

EQUIPMENT ACCESSORIES
1 = MANIFOLD KIT
2 = REFRIGERANT PIPING CURB
3 = 24" HIGH EQUIPMENT SUPPORTS
4 = BAS BACNET (MS/TP) INTERFACE
5 = LOW AMBIENT (WIND) BAFFLES
6 = PROVIDE 2" STATIC DEFLECTION SPRING & NEOPRENE VIBRATION ISOLATION.
7 = PROVIDE BASE PAN HEATER KITS

IDENTIFICATION	DESIGN BASIS	MODEL NO.	SYSTEM	REFRIGERANT	TOTAL COOLING CAP. (BTUH) (1)	TOTAL HEATING CAP. (BTUH) (2)	UNIT ELEC. (3)					MAXIMUM SIZE (L x W x H) (IN)	OPERATING WEIGHT (LBS)	ACCESSORIES	REMARKS / DUPLICATES
							ELEC.	MCA	MOP	MSC	TOCA				
OU–01	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–02	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–03	LG	ARUN038GSS4	HEAT PUMP	410A	38,000	42,000	208/1/60	25	40	PER MFG	PER MFG	–	210	–	
OU–04	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–05	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–06	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–07	LG		HEAT PUMP	410A			208/1/60			PER MFG	PER MFG	–		–	
OU–08	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–09	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–10	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–11	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–12	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–13	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–14	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–15	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–16	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–17	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	
OU–18	LG	ARUN024GSS4	HEAT PUMP	410A	24,200	27,300	208/1/60	19.6	30	PER MFG	PER MFG	–	160	–	

FLOW FAN COIL UNIT HEAT PUMP SCHEDULE

GENERAL NOTES
(1) PREMIUM EFFICIENCY DIRECT DRIVE MOTOR
(2) REFER TO FLOOR PLANS FOR EXACT AIRFLOW
(3) EXTERNAL STATIC PRESSURE INCLUDES DUCT SYSTEM LOSSES, GRILLES, FITTINGS, AND FIRE DAMPER ETC. (EXCLUDES FILTER LOSS)
(4) NOMINAL COOLING CAPACITY BASED ON 95.0°F OUTDOOR AIR
(5) NOMINAL HEATING CAPACITY BASED ON 47.0°F OUTDOOR AIR

EQUIPMENT ACCESSORIES
1 = 2" PLEATED THROWAWAY FILTERS
2 = 1" THROWAWAY FILTERS
3 = DISCHARGE AND RETURN AIR GRILLE(S) FOR NON–DUCTED UNITS. REFER TO FLOOR PLANS FOR DUCTED / NON–DUCTED CONDITIONS
4 = UNIT MOUNTED ELECTRICAL CONNECTION AND NON–FUSED DISCONNECT FOR FAN MOTOR
5 = CONDENSATE PUMP WITH 208/1/60 (0.15 AMPS) ELECTRICAL CONNECTION AND NON–FUSED DISCONNECT
6 = BRANCH SELECTOR BOX WITH 208/1/60 (5.0 WATTS) ELECTRICAL CONNECTION AND NON–FUSED DISCONNECT
7 = UNIT OR WALL MOUNTED THERMOSTAT. REFER TO FLOOR PLANS FOR THERMOSTAT LOCATION
8 = AUXILLARY DRAIN PAN WITH FLOAT SWITCH IN PAN TO TURN OFF FCU UPON DETECTION OF CONDENSATE
9 = BAS BACNET (MS/TP) INTERFACE
10 = PROVIDE 1" STATIC DEFLECTION SPRING AND NEOPRENE PAD

IDENTIFICATION	DESIGN BASIS	MODEL NO.	CABINET TYPE	FAN (1)				COOLING COIL (4)			HEATING COIL (5)		UNIT ELEC. (1)				MAXIMUM SIZE (L x W x H) (IN)	ACCESSORIES	REMARKS / DUPLICATES
				CFM (HIGH) (2)	CFM (LOW) (2)	OUTSIDE AIR (CFM)	T.E.S.P. (IN) (3)	ENTERING DB (°F)	ENTERING WB (°F)	TOTAL CAP. (BTUH)	ENTERING DB (°F)	TOTAL CAP. (BTUH)	ELEC.	MCA	MOP	FLA			
FCU–01	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–02	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–03	LG	ARNU283M2A4	MULTI V DUCTED	893	622	–	0.39	75.0	67.0	28,000	70.0	31,500	208/1/60	–	–	PER MFG	–	–	
FCU–04	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–05	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–06	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–07	LG	–	MULTI V DUCTED										208/1/60	–	–	PER MFG	–	–	
FCU–08	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–09	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–01	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–02	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–03	LG	ARNU283M2A4	MULTI V DUCTED	893	622	–	0.39	75.0	67.0	28,000	70.0	31,500	208/1/60	–	–	PER MFG	–	–	
FCU–04	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–05	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–06	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–07	LG	–	MULTI V DUCTED										208/1/60	–	–	PER MFG	–	–	
FCU–08	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	
FCU–09	LG	ARNU243M2A4	MULTI V DUCTED	671	547	–	0.31	75.0	67.0	24,200	70.0	27,300	208/1/60	–	–	PER MFG	–	–	

NOTE:
A. – PROVIDE UNIT WITH ZFBXBG01A MICROMETL HIGH EFFICIENCY FILTER BOX.

SILENCER SCHEDULE (VIBRO-ACOUSTICS)

TAG	SYSTEM	DIMENSIONS (inches) TYPE (NOTE 1)	WIDTH OR DIA.	HEIGHT	LENGTH	AIR FLOW (CFM)	VELOCITY (FPM)	MAX. PD (in. wg	MAX. PD WITH SYS. EFF. (in. wg.	CURB	MANUFACTURER & MODEL NO.	BIRD SCREEN	MINIMUM DYNAMIC INSERTION LOSS, dB: OCTAVE BAND CENTER FREQUENCY, HZ 63	125	250	500	1000	2000	4000	8000	MAXIMUM SELF GENERATED NOISE, dB	BASIS OF DESIGN VIBRO–ACOUSTICS MODEL NUMBER	NOTES
ST–1	RTU–X	II	–	–	–	–	–	–		18" H INSULATED	GREENHECK – FGR	YES										I	I
ST–2	–	–	–	–	–	–	–	–															

A. RWB=RECTANGULAR MOLDBLOCK, REMB=RECTANGULAR ELBOW MOLD BLOCK, EXRMB=EXTENDED RECTANGULAR MOLDBLOCK, CRWMB=EXTENDED CONSTRICTION ELBOW MOLDBLOCK
B. GALVANIZED CASING
C. ACOUSTIC MEDIA SHALL BE VIBRO–ACOUSTICS MOLDBLOCK MEDIA CONTAINING 100% NATURAL COTTON FIBERS TREATED WITH AN EPA REGISTERED, NON–TOXIC BORATE SOLUTION, 'FLASH–DRIED' TO PROVIDE RESISTANCE TO MOLD, MILDEW AND FUNGI. MEDIA SHALL COMPLY WITH UL181 AND NFPA 90A. MOLDBLOCK MEDIA SHALL BE PACKED WITH A MINIMUM OF 15% COMPRESSION DURING SILENCER ASSEMBLY. MEDIA SHALL NOT CAUSE OR PROMOTE CORROSION OF ALUMINUM OR STEEL. GLASS FIBER, FIBERGLASS AND ROCKWOOL WILL NOT BE PERMITTED AS A SUBSTITUTE FOR MOLDBLOCK MEDIA.
D. PROVIDE, FOR APPROVAL, ACOUSTIC CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT DUCTBORNE FAN SOUND LEVEL, INCLUDING AIRBORNE AND BREAKOUT NOISE, IN THE OCCUPIED SPACE SPACES MEET NC 35.
E. FTL CASING
F. ELBOW SILENCER

RELIEF HOOD SCHEDULE

MARK	UNIT SERVING	USE	CFM	HOOD SIZE LENGTH (IN.)	HOOD SIZE WIDTH (IN.)	HOOD SIZE HEIGHT (IN.)	THROAT SIZE LENGTH (IN.)	THROAT SIZE WIDTH (IN.)	THROAT VELOCITY (FPM)	PRESSURE DROP (IN. OF WC)	CURB	MANUFACTURER & MODEL NO.	BIRD SCREEN
RH–1	RETURN FAN SHAFT	EXHAUST	–	51	26	14	36	12	–	–	18" H INSULATED	GREENHECK – FGR	YES

NOTE: PROVIDE ALL RELIEF HOODS WITH BURGULAR BARS

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MECHANICAL SCHEDULES

M4.00

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PLUMBING ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TD 2-4 DATED NOVEMBER 1986 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
A.L.	2" THICK ACOUSTIC DUCT LINER
ALT	ALTERNATIVE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
AT	AIR TRANSFER
ATR	AIR TEMPERATURE RISE
ATV	AIR TURNING VANES
AUTO	AUTOMATIC
AVE	AIR VOLUME EXTRACTOR
B-#	BOILER
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOT	BOTTOM
C	CONVECTOR
CAB	CABINET
CD-#	CEILING DIFFUSER
CIA	COMBUSTION INTAKE AIR
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWP	CHILLED WATER PUMP
CL	CENTERLINE
CLG	CEILING
CMP	CORRUGATED METAL PIPE
C.O.	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSER(ATE)
CRTN	LOW PRESSURE STEAM CONDENSATE
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CPD	CONDENSATE PUMP DISCHARGE
CP	CIRC PUMP
CT-#	COOLING TOWER
CUH-#	CABINET UNIT HEATER
CW	COLD WATER (DOMESTIC)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH/DEEP
DB	DRY BULB TEMPERATURE
DIA/ø	DIAMETER
DIFF	DIFFUSER
DISCH	DISCHARGE
DLR	DOUBLE LOUVER REGISTER
DWG	DRAWING
DUC	DOOR UNDER CUT
EF-#	EXHAUST FAN
EFF	EFFICIENCY
EG-#	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMD	END OF MAIN DRIP
EMER	EMERGENCY
EP	ELECTRIC/PNEUMATIC
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EXTN	EXTENSION
F&TT	FLOAT AND THERMOSTATIC TRAP
FCU-#	FAN COIL UNIT
F/SD	COMBINATION FIRE/SMOKE DAMPER
FD	FLOOR DRAIN
FD1	FIRE DAMPER TYPE
FEV	FLUE EXHAUST VENT
FIN FL/FF	FINISH FLOOR
FLR	FLOOR
FA	FRESH AIR
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FUR-#	FURNACE
G	GAS (NATURAL)
GAL	GALLON
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HRU	HEAT RECOVERY UNIT
HTR	HEATER
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HW	HOT WATER (DOMESTIC)
ID	INSIDE DIAMETER
INCIN	INCINERATOR
INSUL	INSULATION/INSULATE
IV	INTAKE VENT
INTR	INTERIOR
INV	INVERT
KW	KILOWATT
L	LENGTH/LONG
LAV	LAVATORY
LP	LIQUID PETROLEUM
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LVR	LOUVER
M	METER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO/#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
ORD-#	OVERFLOW ROOF DRAIN
OS	OIL SUPPLY
OSD	OPEN SITE DRAIN
PE	PNEUMATIC/ELECTRIC
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
R/RAD	RADIUS
RA	RETURN AIR
RACU	ROOM AIR CONDITIONING UNIT
RADN	RADIATION
RG-#	RETURN AIR GRILLE
RCP	REINFORCED CONCRETE PIPE
RD-#	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RHW	RECIRCULATED HOT WATER (DOMESTIC)
RL	REFRIGERANT LIQUID
RM	ROOM
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSD	ROUND SUPPLY DIFFUSER
SA	SUPPLY AIR
SCHED	SCHEDULE
SD-#	SUPPLY DIFFUSER
SG-#	SUPPLY AIR GRILLE
SHT	SHEET
SP	STATIC PRESSURE
T.A.D.	TRANSFER AIR DUCT
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPERATURE
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH-#	UNIT HEATER
UV	UNIT VENTILATOR
V	VENT
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VIF	VERIFY IN FIELD
VTR	VENT-THRU-ROOF
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WC-#	WATER CLOSET
W.C.O.	WALL CLEANOUT
WH-#	WATER HEATER

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	CHECK VALVE
	BALANCING VALVE
	COMBINATION BALANCE VALVE & FLOW METER
S	SOLENOID VALVE
M	MOTOR OPERATED VALVE
	PLUG VALVE
	THREE WAY CONTROL VALVE
	CONTROL VALVE
	BUTTERFLY VALVE
	PRESSURE REGULATOR VALVE
	PRESSURE RELIEF VALVE
	THERMOMETER
	STRAINER
	UNION
	PRESSURE GAGE WITH COCK
	FLEXIBLE CONNECTOR
	CAP OFF EXISTING
	REMOVE
	CONNECT TO EXISTING
	PIPE TURNED UP
	PIPE TURNED DOWN
	PIPE OUT TOP
	PIPE OUT BOTTOM
HHWS	HEATING HOT WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
	VENT PIPING
FP	FIRE PROTECTION PIPING
FDCP	FIRE DEPARTMENT CONNECTION PIPING
NG	NATURAL GAS PIPING
ORC	OVERFLOW RAIN CONDUCTOR PIPING
RC	RAIN CONDUCTOR PIPING
SAN	SANITARY PIPING
ST	STORM PIPING
AW	ACID WASTE PIPING
AW	ACID VENT PIPING
GW	GREASY WASTE PIPING
OXY	OXYGEN PIPING
CA	COMPRESSED AIR

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT.

PLUMBING DRAWING INDEX

SHT No.	SHEET TITLE	SCALE
P0.00	LEGEND, SYMBOLS, & ABBREVIATIONS	NO SCALE
P1.00	PLUMBING NEW WORK PLAN - BASEMENT	1/8"=1'-0"
P1.01	PLUMBING NEW WORK PLAN - FIRST LEVEL	1/8"=1'-0"
P1.02	PLUMBING NEW WORK PLAN - SECOND LEVEL	1/8"=1'-0"
P1.03	PLUMBING NEW WORK PLAN - THIRD LEVEL	1/8"=1'-0"
P1.04	PLUMBING NEW WORK PLAN - ROOF	1/8"=1'-0"
P2.00	PLUMBING DETAILS	NO SCALE
P3.00	PLUMBING DIAGRAMS	NO SCALE
P4.00	PLUMBING SCHEDULES	NO SCALE

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171 (TOLL FREE)

CAUTION !!!

THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

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EAST GRAND BLVD
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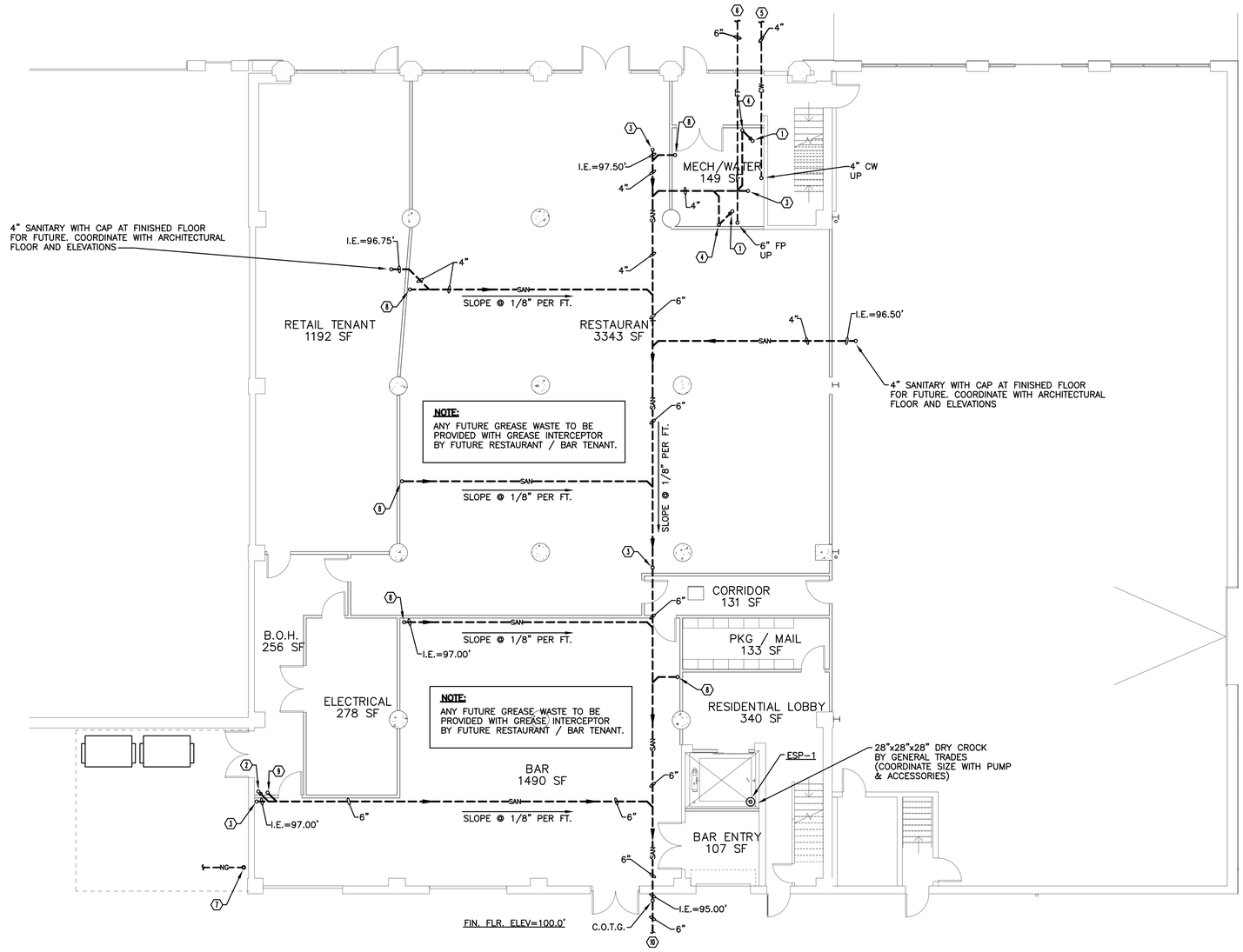
LEGENDS, SYMBOLS, AND ABBREVIATIONS

P0.00

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storm



E GRAND UNDERGROUND - PLUMBING NEW WORK PLAN
Scale: 1/8" = 1'-0"

KEYED NOTES:

1. 4" WASTE UP TO FLOOR DRAIN.
2. 6" WASTE UP TO 6" HUB DRAIN.
3. FLOOR CLEANOUT, FULL LINE SIZE BELOW 4" AND 4" SIZE ON PIPES 4" AND LARGER. COORDINATE COVER TYPE WITH ARCHITECTURAL ROOM FINISH SCHEDULE.
4. 2" VENT UP.
5. 4" UNDERGROUND DUCTILE IRON, CLASS 54, DOUBLE CEMENT LINED DOMESTIC WATER MAIN. COORDINATE EXACT LOCATION WITH CIVIL SITE UTILITIES PLAN AND MAINTAIN 5'-0" MINIMUM COVER OVER TOP OF PIPE.
6. 6" UNDERGROUND DUCTILE IRON, CLASS 54, DOUBLE CEMENT LINED FIRE PROTECTION MAIN. COORDINATE EXACT LOCATION WITH CIVIL SITE UTILITIES PLAN AND MAINTAIN 5'-0" MINIMUM COVER OVER TOP OF PIPE.
7. UNDERGROUND NATURAL GAS SERVICE PIPING. PROVIDED BY LOCAL GAS COMPANY. COORDINATE REQUIRED NATURAL GAS PRESSURE TO METER AND REGULATOR TO MAINTAIN 11" WC DISCHARGE PRESSURE DOWN STREAM OF METER AND REGULATOR AT THE NATURAL GAS LOAD NOTED.
8. 4" WASTE UP.
9. 4" WASTE UP.
10. 6" STORM TO 5'-0" FROM BUILDING. FINAL CONNECTION BY SITE CONTRACTOR. (I.E.=95.00')

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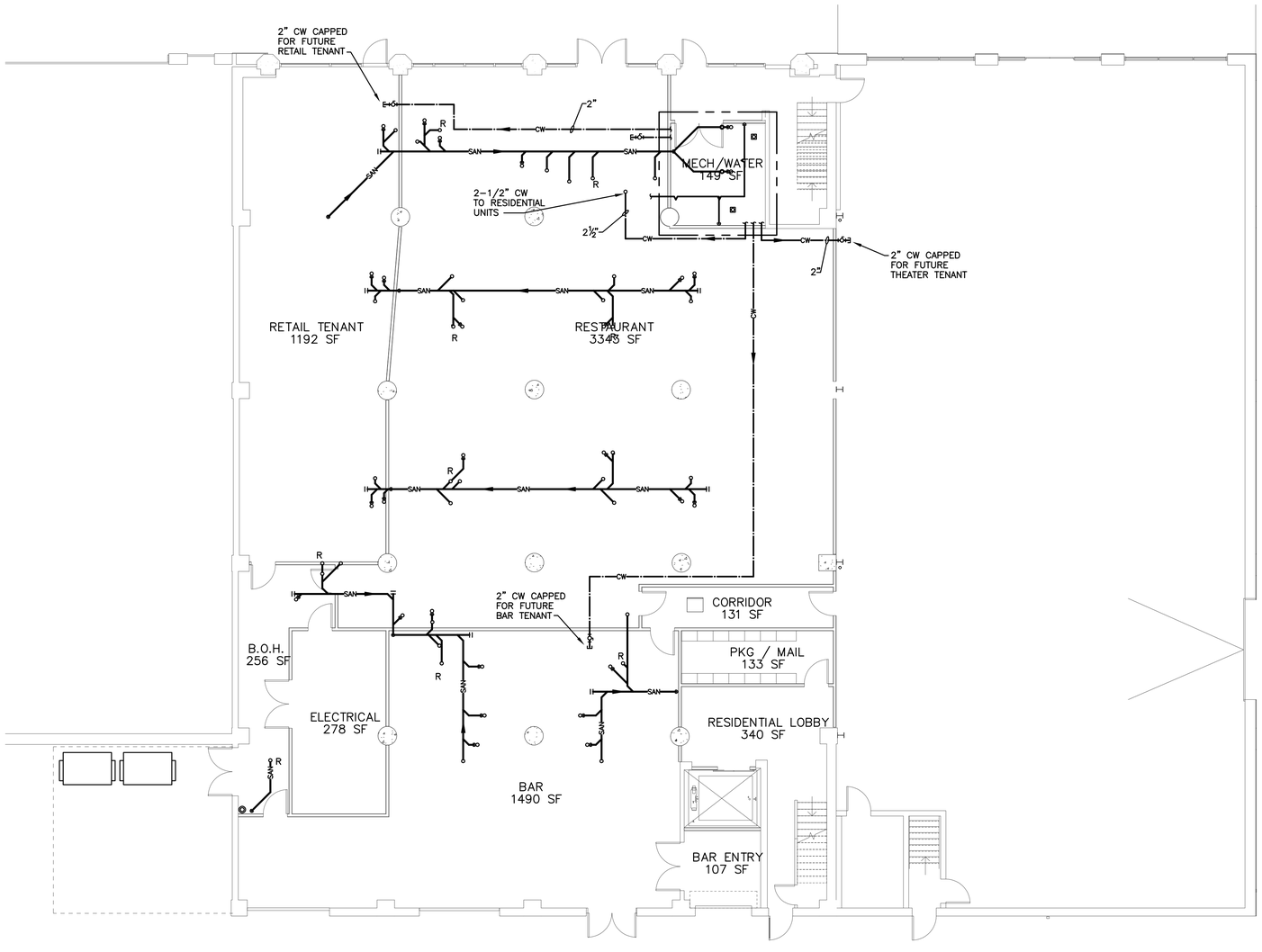
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UNDERGROUND - PLUMBING NEW WORK PLAN

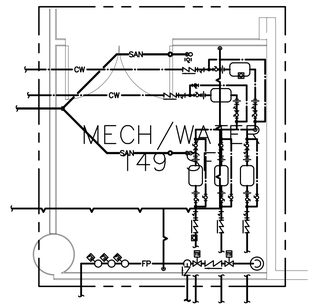
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E GRAND LEVEL 1 - PLUMBING NEW WORK PLAN
Scale: 1/8" = 1'-0"



ENLARGED PLAN
Scale: 1/4" = 1'-0"

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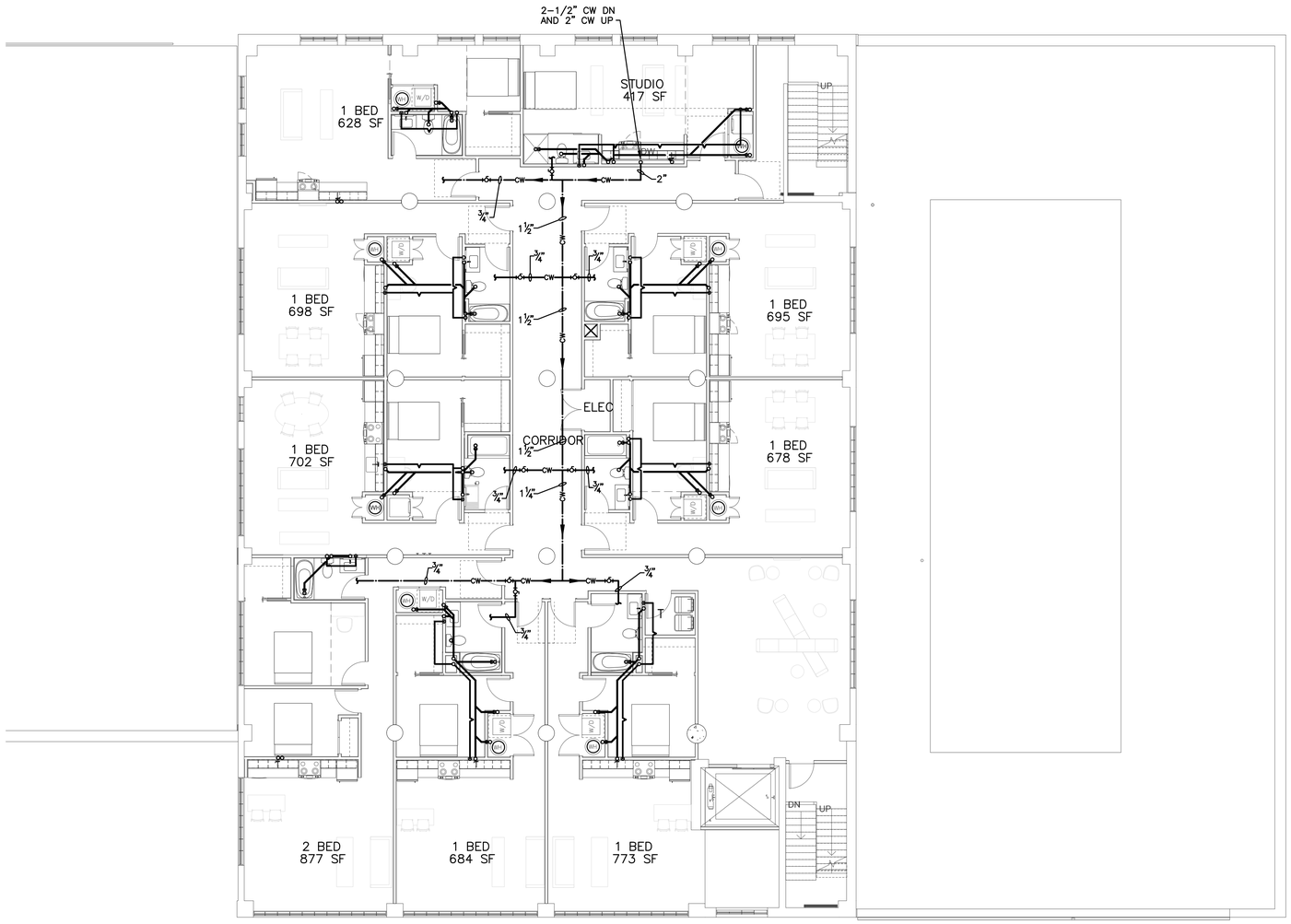
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LEVEL 1 - PLUMBING NEW WORK PLAN

P1.01

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E GRAND LEVEL 2 - PLUMBING NEW WORK PLAN
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PROJECT# 19-0203
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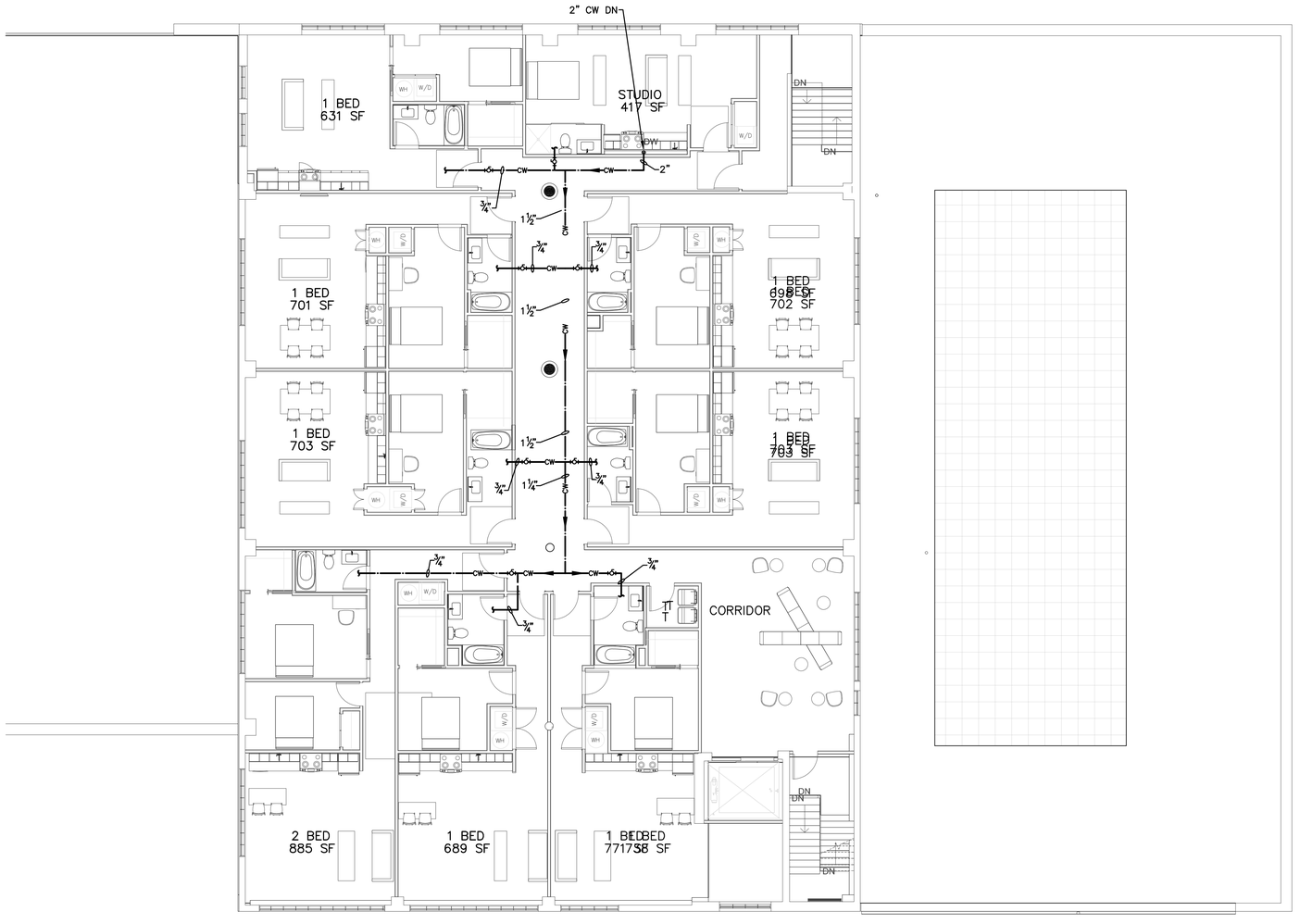
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DRAWING ISSUE	DATE
FEASIBILITY DOCUMENTS	1.25.2019
95% SCHEMATIC DESIGN	5.10.2019
100% SCHEMATIC DOCUMENTS	6.06.2019
100% DESIGN DEVOLVEMENT	8.01.2019

LEVEL 2 - PLUMBING NEW WORK PLAN

P1.02

SCALE : AS INDICATED
7/15/2019 2:11:19 PM



E GRAND LEVEL 3 - PLUMBING NEW WORK PLAN
Scale: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST. SUITE 700
DETROIT, MI 48226

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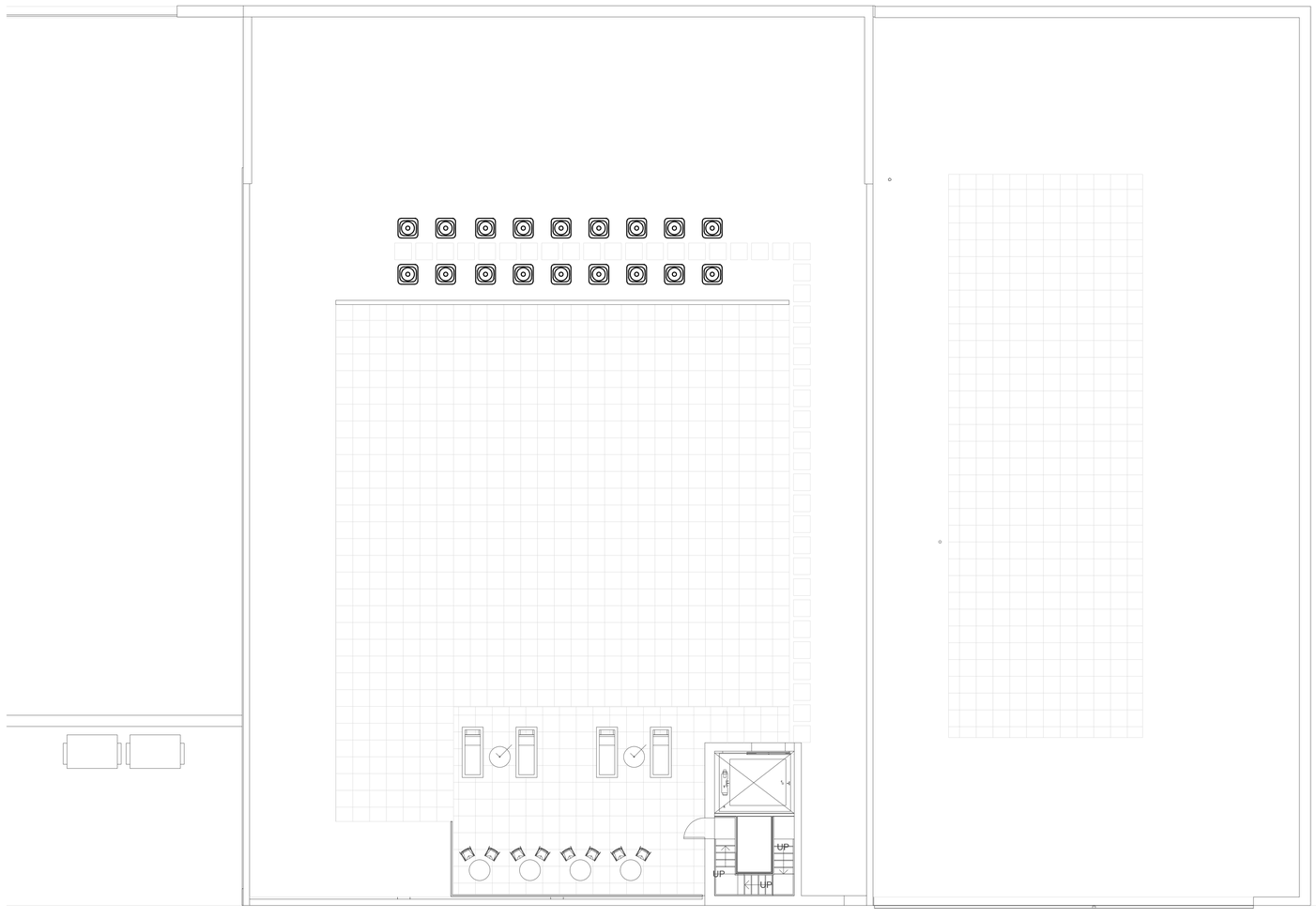
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LEVEL 3 - PLUMBING NEW WORK PLAN

P1.03

SCALE : AS INDICATED
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E GRAND ROOF - PLUMBING NEW WORK PLAN
Scale: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

1014
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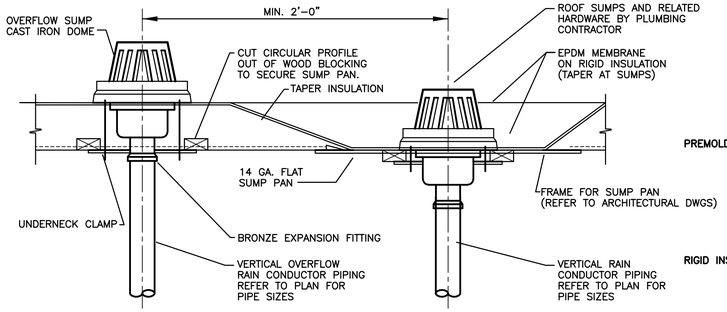
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100% DESIGN DEVOLVEMENT	8.01.2019

ROOF - PLUMBING NEW WORK PLAN

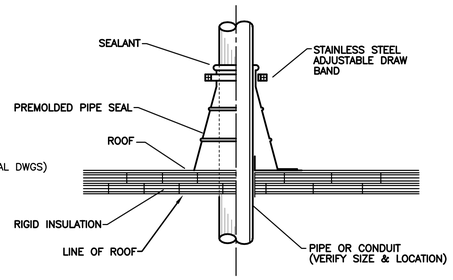
P1.04

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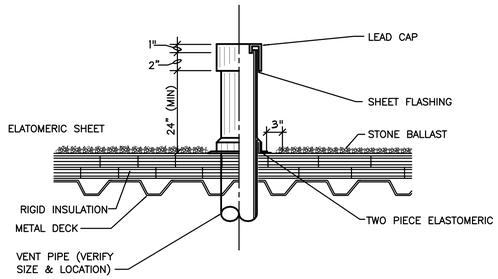


NOTES:
1. PLUMBING AND ARCHITECTURAL TRADES SHALL COORDINATE ALL REQUIREMENTS TO ASSURE PROPER WATERTIGHT INSTALLATION.
2. COORDINATE ROOF SUMP AND OVERFLOW SUMP LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL ROOF PLANS.

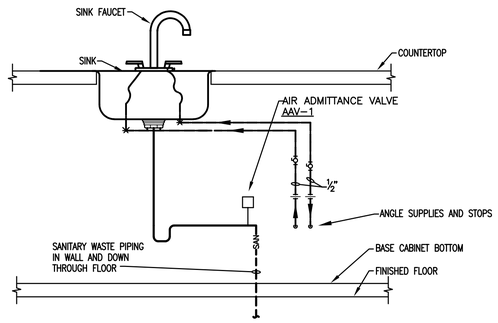
TYPICAL ROOF SUMP WITH OVERFLOW DETAIL
NO SCALE



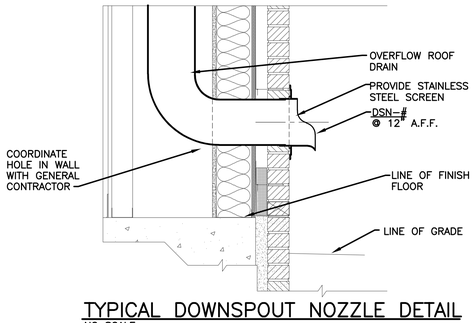
PIPE PENETRATION THROUGH ROOF DETAIL
NO SCALE



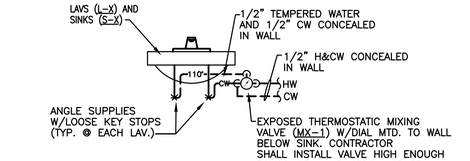
VENT THROUGH ROOF DETAIL
NO SCALE



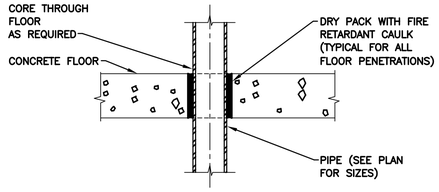
SINK & AIR ADMITTANCE VALVE DETAIL
NO SCALE



TYPICAL DOWNSPOUT NOZZLE DETAIL
NO SCALE

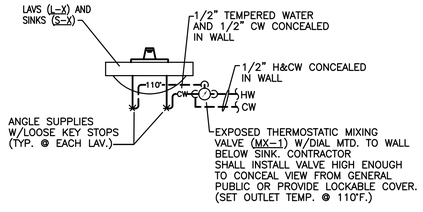


THERMOSTATIC MIXING VALVE DETAIL, MX-1
NOT TO SCALE

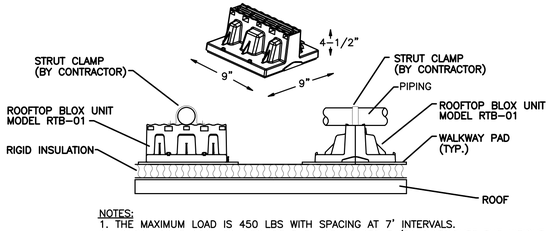


WITHOUT INSULATION

PIPE SLEEVE THROUGH FLOOR DETAIL
NO SCALE

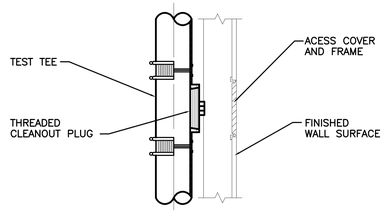


THERMOSTATIC MIXING VALVE DETAIL, MX-1
NOT TO SCALE

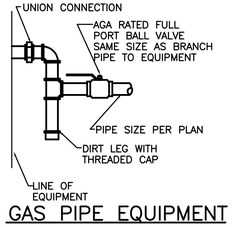


NOTES:
1. THE MAXIMUM LOAD IS 450 LBS WITH SPACING AT 7' INTERVALS.
2. LOADS ABOVE 250 LBS REQUIRE THE USE OF STRUT (TO DISTRIBUTE THE WEIGHT LOAD).
3. THE LOAD MUST BE CENTERED ON THE ROOFTOP BLOX UNIT.
4. THE PIPING SHALL BE ATTACHED USING STANDARD STRUT CLAMPS.

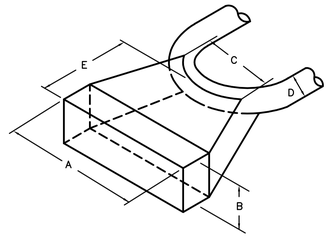
PIPE SUPPORT ON ROOF
NO SCALE



WALL CLEANOUT DETAIL
NO SCALE



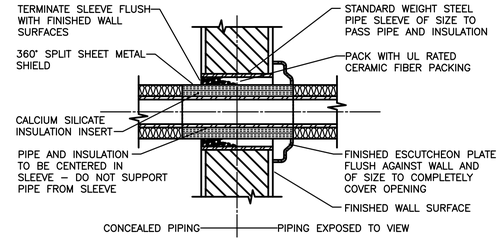
GAS PIPE EQUIPMENT CONNECTION DETAIL
NO SCALE



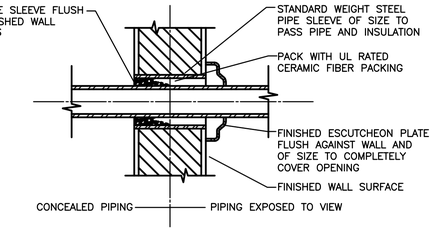
NOTE: ALL THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH WITH MINIMUM 3000 P.S.I. STRENGTH CONCRETE @ 28 DAYS

BENDS (90° OR LESS)				
D	A	B	C	E (MIN)
6"	2'-6"	1'-6"	2'-0"	1'-6"
8"	3'-6"	2'-6"	2'-0"	1'-6"
10"	4'-0"	3'-0"	2'-0"	2'-0"
12"	5'-6"	3'-0"	2'-0"	2'-0"

THRUST BLOCK DETAIL
NO SCALE

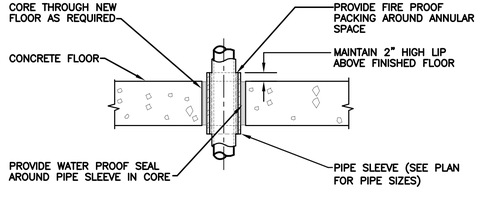


WITH INSULATION



WITHOUT INSULATION

TYPICAL DETAIL OF PIPE THROUGH INTERIOR WALLS
NO SCALE



INSULATED PIPE

PIPE SLEEVE THROUGH FLOOR DETAIL
NO SCALE

NOT FOR CONSTRUCTION

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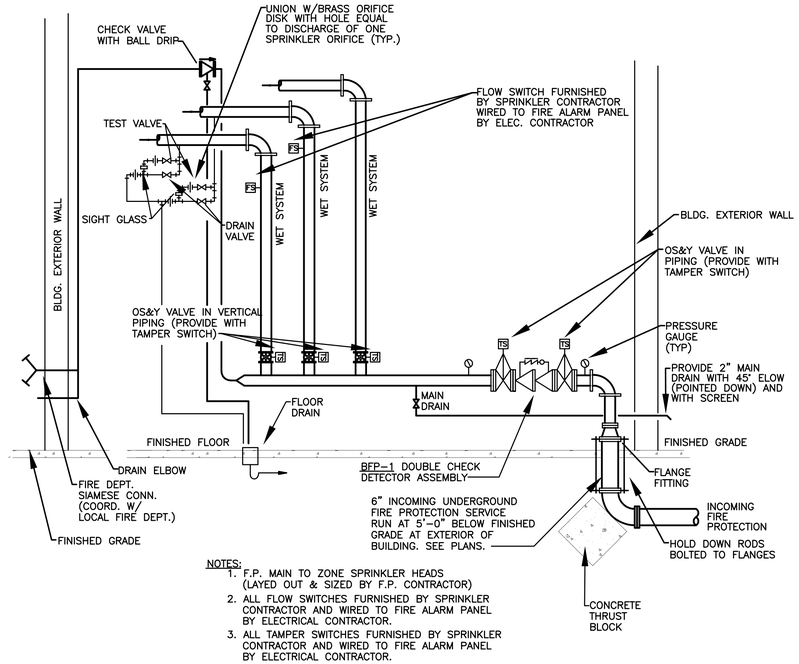
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PLUMBING DETAILS

P2.00

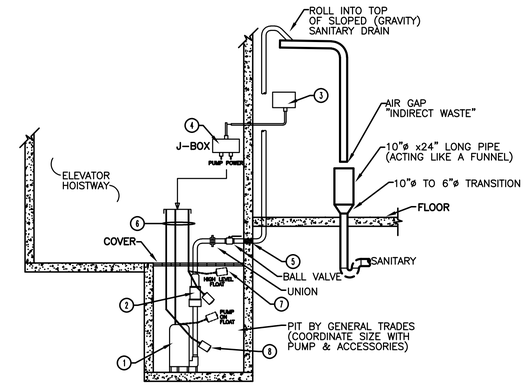
SCALE : AS INDICATED
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NOTES:
1. F.P. MAIN TO ZONE SPRINKLER HEADS (LAYED OUT & SIZED BY F.P. CONTRACTOR)
2. ALL FLOW SWITCHES FURNISHED BY SPRINKLER CONTRACTOR AND WIRED TO FIRE ALARM PANEL BY ELECTRICAL CONTRACTOR.
3. ALL TAMPER SWITCHES FURNISHED BY SPRINKLER CONTRACTOR AND WIRED TO FIRE ALARM PANEL BY ELECTRICAL CONTRACTOR.

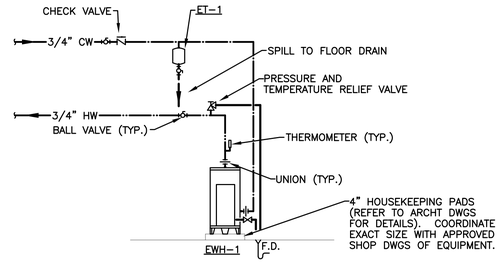
FIRE PROTECTION SYSTEM SCHEMATIC PIPING DIAGRAM
NO SCALE

NOTES:
1. BY-PASS METER PIPING ASSEMBLY SHALL HAVE DOUBLE CHECK ASSEMBLY CONFORMING TO ASSE 1048 LOCATED DOWNSTREAM OF BY-PASS METER.
2. 6" UNDERGROUND SERVICE SHALL TERMINATE AT 12" ABOVE FINISHED FLOOR WITH A BLANK FLANGE. FIRE PROTECTION DESIGN CONTRACTOR SHALL DETERMINE FINAL RISER SIZE REQUIREMENTS, ONCE HYDRAULIC CALCULATIONS HAVE BEEN COMPLETED

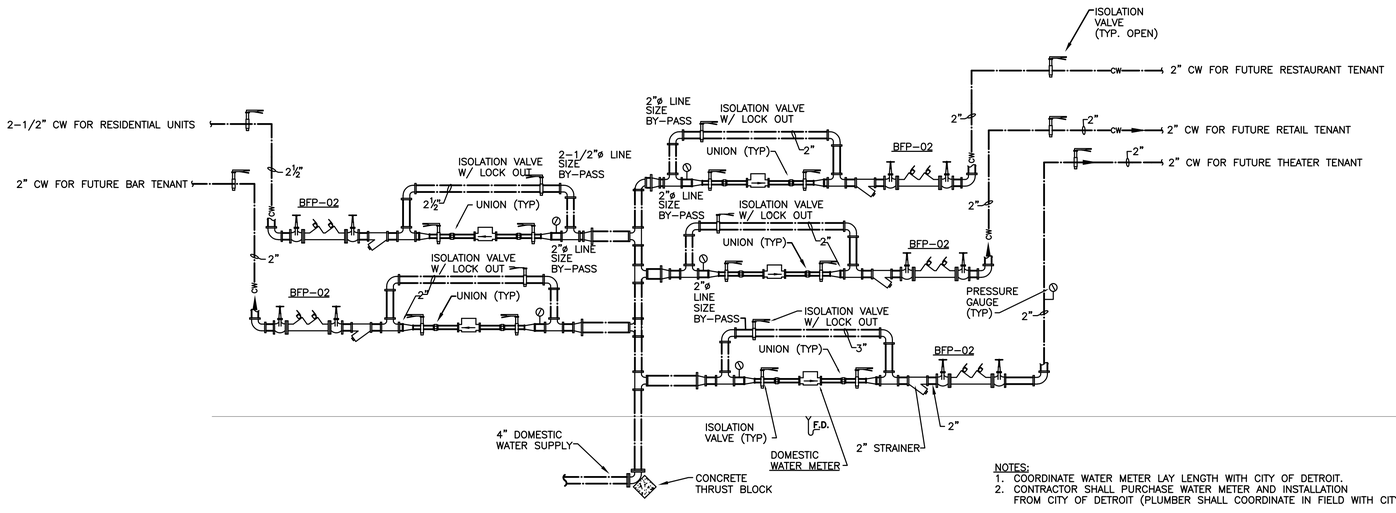


1. SUBMERSIBLE EFFLUENT PUMP (SEE SCHEDULE FOR MAKE AND MODEL).
2. CHECK VALVE
3. SIMPLEX CONTROLLER CONTROL SYSTEM WITH BUILT IN AUDIBLE AND VISUAL ALARM WHEN PUMP IS RUNNING AND/OR HIGH LIQUID ALARM. PROVIDE SILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR A REMOTE ALARM LOCATION. JUNCTION BOX WILL BE PROVIDED WITH CONNECTOR AND CORD IN LENGTHS AS REQUIRED, 25 FT STANDARD, OPTIONAL 25 FT INCREMENTS. LIGHTS FOR POWER, HIGH LIQUID LEVEL, OVERLOAD, AND PUMP RUNNING.
4. JUNCTION BOX WILL BE PROVIDED WITH CONNECTOR AND CORD IN LENGTHS AS REQUIRED; 25 FT. IS STANDARD, OPTIONAL 25 FT. INCREMENTS AVAILABLE.
5. ALL BURIED PUMP PRESSURE DISCHARGE PIPING SHALL BE PROTECTED WITH TAPECOAT CT CORROSION PROTECTION TAPE.
6. CABLE: POWER CABLE, HIGH LIQUID ALARM CABLE, AND PUMP ON FLOAT CABLE.
7. HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING.
8. PUMP ON FLOAT.

ELEVATOR PIT SIMPLEX SUMP/PUMP PIPING DETAIL
NO SCALE



ELECTRIC WATER HEATER DIAGRAM, DWH-1
NO SCALE



NOTES:
1. COORDINATE WATER METER LAY LENGTH WITH CITY OF DETROIT.
2. CONTRACTOR SHALL PURCHASE WATER METER AND INSTALLATION FROM CITY OF DETROIT (PLUMBER SHALL COORDINATE IN FIELD WITH CITY).

DOMESTIC WATER SYSTEM DIAGRAM
NO SCALE

NOT FOR CONSTRUCTION

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PLUMBING DIAGRAMS

P3.00

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ELECTRIC WATER HEATER SCHEDULE

TAG	SYSTEM SERVED	LOCATION	MANUFACTURER AND MODEL NUMBER	CAPACITIES			ELEC. DATA			WGT (LBS)	NOTES/ACCESSORIES
				REC.	NOM. STOR.	TEMP. RISE	K.W. INPUT	V	ø		
EWH-1	ELECTRIC HOT WATER	SEE DWGS	LOCHINVAR KTJ040KD	21	40	90	4.5	208	1	452	PROVIDE WITH 4" HOUSE KEEPING PAD & DRAIN PAN

NOTES:
1. DISCONNECT BY ELECTRICAL.
2. WATER HEATER SHALL BE MOUNTED ON 4" HOUSEKEEPING PAD.

PLUMBING EQUIPMENT SCHEDULE

EQUIPMENT NO.	EQUIPMENT	SIZE	STORAGE CAPACITY GALLON	ELEC.	MANUFACTURER & MOD. #
MX-1	THERMOSTATIC MIXING VALVE	1/2"ø	–	–	CONBRACO MODEL 34B, 1/2" INLETS, 1/2" OUTLET WITH CHECKS. LOCATED UNDER SINK OR IN CEILING SPACE. (ASSE 1016 APPROVED)
DET-1	EXPANSION TANK	10"øx14"	–	–	WESSELS COMPANY MOD. TTA-5, 3.5 GAL., 2.3 EXPANSION VOLUME GAL., 3/4" NPT, & 75 LBS. (POTABLE DUTY) ASME STAMPED
AAV-1	AIR ADMITTANCE VALVE	MINI-VENT	–	–	STUDOR MINI-VENT
WHA-1	WATER HAMMER ARRESTOR	1/2"ø	–	–	SIOUX CHIEF MODEL 660 SIZE A -- MAX WORKING TEMP = 250°F, TESTED TO 500,000 CYCLES, SAFE WORKING PRESSURE TO 350 PSIG (FIXTURE UNITS 1-11)
WHA-2	WATER HAMMER ARRESTOR	3/4"ø	–	–	SIOUX CHIEF MODEL 660 SIZE B -- MAX WORKING TEMP = 250°F, TESTED TO 500,000 CYCLES, SAFE WORKING PRESSURE TO 350 PSIG (FIXTURE UNITS 12-32)
WHA-3	WATER HAMMER ARRESTOR	1"ø	–	–	SIOUX CHIEF MODEL 660 SIZE C -- MAX WORKING TEMP = 250°F, TESTED TO 500,000 CYCLES, SAFE WORKING PRESSURE TO 350 PSIG (FIXTURE UNITS 33-60)
ESP-1	ELEVATOR SUMP PUMP	50 GPM @ 37' HEAD		208v.-3ø 1.0 HP 3600 RPM (30' CORD & PLUG)	ZOELLER SUMP PUMP SYSTEM MODEL J185 (W/ 30' CORD), 2" DISCHARGE, UL LISTED, HIGH LIQUID FLOAT, CHECK VALVE, POWER CABLE, HIGH LIQUID ALARM, CONTROL SYSTEM PANEL W/ BUILT-IN AUDIBLE & VISIBULE ALARM, AND SINGLE DIRECT PLUG-IN. (1.0 HP, 208V, 3PH, 3600 RPM, 8 AMPS). (REFER TO DETAIL ON SHEET XXXXXXX)
BFP-1	FIRE PROT. BACKFLOW PREVENTER	SIZE AS REQ'D			AMES MODEL 3000SS DOUBLE CHECK DETECTOR ASSEMBLY. ASSE LISTED 1048. HORIZONTAL OR VERTICAL INSTALLATION
BFP-2	BACKFLOW PREVENTER (DCW)	3"ø			WILKINS MODEL 350XLT. PROVIDE WITH TEST PORTS AND NON RISING STEM GATE VALVES ON INLET AND OUTLET.

PLUMBING FIXTURE SCHEDULE

TAG	ITEM	MAKE	MODEL NAME	MODEL NUMBER	PIPE CONNECTION SIZES				NOTES/ACCESSORIES
					W	V	CW	HW	
WC-1	BARRIER FREE WATER CLOSET	DURAVIT	–	217009	4"	–	1/2"	–	FLOOR MOUNTED, TANK TYPE FLUSH CONTROL & ADA COMPLIANT (WC TO HAVE LEFT OR RIGHT-HAND TRIP LEVER – SEE PLANS)
L-1	LAVATORY	DURAVIT	–	2353600071	2"	1 1/2"	1/2"	1/2"	DURASQUARE FURNITURE WASHBASIN 23-5/8"" PROVIDE ESSENCE 1 HOLE FAUCET CHROME MODEL #32216000
L-2	LAVATORY	DURAVIT	–	235800071	2"	1 1/2"	1/2"	1/2"	DURASQUARE FURNITURE WASHBASIN 31-1/2" PROVIDE ESSENCE 1 HOLE FAUCET CHROME MODEL #32216000
L-3	LAVATORY	DURAVIT	–	2353100071	2"	1 1/2"	1/2"	1/2"	DURASQUARE FURNITURE WASHBASIN 39-3/8" PROVIDE ESSENCE 1 HOLE FAUCET CHROME MODEL #32216000
KS-1	SINGLE COMPART. SINK	ELKAY	CROSSTOWN	ECTRU24179RT	2"	1 1/2"	1/2"	1/2"	SELF-RIMMING STAINLESS STEEL, SINGLE BOWL, DECKMOUNT GOOSENECK WITH SINGLE LEVER (ADA COMPLIANT)
SH-1	SHOWER VALVE	GROHE	ESSENCE	1957800A	–	–	1/2"	1/2"	SHOWER TRIM, PRESSURE BALANCED, INTEGRAL CHECKS SINGLE METAL HANDLE, SHOWERHEAD, ARM, FLANGE
BT-1	BATH TUB	DURAVIT	ARCHITEC	700407	2"	–	1/2"	1/2"	60"x32"x15" 1-PIECE TUB/SHOWER WITH DRAIN COORDINATE DRAIN HAND IN FIELD (ADA COMPLIANT)
FD-1	FLOOR DRAIN	ZURN	–	ZN-415-3NH-5B-VP	3"	–	–	–	FLOOR DRAIN WITH TYPE "B" STRAINER & VANDAL PROOF GRATE & TRAP PRIMER CONNECTION
WCO	WALL CLEANOUT	ZURN	–	Z-1446-A-VP-"X"NL	FULL LINE SIZE, SEE PLANS				ROUND SMOOTH S.S. COVER WITH SCREW
FCO	FLOOR CLEANOUT	ZURN	–	ZN-1400-VP	FULL LINE SIZE, SEE PLANS				ADJUSTABLE FLOOR CLEANOUT
GD-1	GARBAGE DISPOSAL	IN-SINK-ERATOR	EVOLUTION COMPACT	78238	1-1/2"	–	–	–	3/4 HP, STAINLESS STEEL GRINDING ELEMENTS, AUTO REVERSE
DSN-1	DOWNSPOUT NOZZLE	ZURN	–	ZAB-199-4IP-SS	4"	–	–	–	ALL POLISHED BRONZE BODY AND STAINLESS STEEL SCREEN
DSN-2	DOWNSPOUT NOZZLE	ZURN	–	ZAB-199-8IP-SS	8"	–	–	–	ALL POLISHED BRONZE BODY AND STAINLESS STEEL SCREEN
RS-1	ROOF SUMP	ZURN	–	ZC-100-4NH	4"	–	–	–	15"ø DRAIN W/ LOW SILOUETTE & CAST IRON DOME
ORS-1	ROOF SUMP	ZURN	–	ZC-100-4NH-W4	4"	–	–	–	15"ø DRAIN W/ LOW SILOUETTE, CAST IRON DOME, & 4" INTERNAL WATER DAM
WH-1	EXTERIOR WALL HYDRANT	WOODFORD	–	B65	–	–	3/4"	–	NON-FREEZE, ANTI SIPHON, AND AUTO DRAINING

PLUMBING FIXTURE SPECIFICATION

1. WC-1: BARRIER FREE FLOOR MOUNTED TANK TYPE WATER CLOSET; DURAVIT MODEL 217009 ADA WATER CLOSET, LOW CONSUMPTION (1.6 gpf) CLOSE-COUPLED TANK WITH ELONGATED INGENIUM FLUSHING BOWL. KARTELL 891331 TOILET SEAT WITH /AUTOMATIC LOWERING SYSTEM INSTALLATION SHALL MEET ADA REQUIREMENTS.

 NOTE: WATER CLOSET TO HAVE LEFT OR RIGHT-HAND TRIP LEVER DEPENDING ON LOCATION OF WALL/GRAB BARS – SEE PLANS TO DETERMINE WHERE WALL/GRAB BARS ARE LOCATED AND ORDER THE PROPER HAND CONFIGURATION. PLUMBER SHALL BE RESPONSIBLE TO DETERMINE HAND ORIENTATION AND ORDER PROPER QUANTITY OF BOTH. FLUSH LEVER (TRIP LEVER) TO BE ON OPEN SIDE OF TOILET, AWAY FROM SIDE WALL WITH GRAB BAR.

2. L-1: FURNITURE WASHBASIN; DURAVIT MODEL NO. 2353600071. PROVIDE GROHE 1 HOLE FAUCET MODEL 32216000(ADA COMPLIANT) . PROVIDE CHROME PLATED, CAST BRASS GRID DRAIN STRAINER, P-TRAP WITH C.O. PLUG, QUARTER TURN ANGLE SUPPLIES AND STOP VALVES. INSULATE EXPOSED WASTE AND WATER PIPING.

3. L-2: FURNITURE WASHBASIN; DURAVIT MODEL NO. 235800071. PROVIDE GROHE 1 HOLE FAUCET MODEL 32216000(ADA COMPLIANT) . PROVIDE CHROME PLATED, CAST BRASS GRID DRAIN STRAINER, P-TRAP WITH C.O. PLUG, QUARTER TURN ANGLE SUPPLIES AND STOP VALVES. INSULATE EXPOSED WASTE AND WATER PIPING.

4. L-3: FURNITURE WASHBASIN; DURAVIT MODEL NO. 2353100071. PROVIDE GROHE 1 HOLE FAUCET MODEL 32216000(ADA COMPLIANT) . PROVIDE CHROME PLATED, CAST BRASS GRID DRAIN STRAINER, P-TRAP WITH C.O. PLUG, QUARTER TURN ANGLE SUPPLIES AND STOP VALVES. INSULATE EXPOSED WASTE AND WATER PIPING.

5. KS-1: SINGLE COMPARTMENT SINK: ELKAY MODEL ECTRU24179RT STAINLESS STEEL SINK, WITH STRAINER, RUBBER STOPPER, AND OFF-SET TAIL PIECE. GROHE MODEL 32665001 SINGLE LEVER DECKMOUNT FAUCET, PULL DOWN SPOUT WITH MAGNETIC DOCKING. PROVIDE CHROME PLATED CAST BRASS P-TRAP, ANGLE SUPPLIES AND STOP VALVES. (ADA COMPLIANT) INSULATE EXPOSED WASTE AND WATER PIPING.

6. GD-1: GARBAGE DISPOSAL: IN-SINK-ERATOR MODEL EVOLUTION CONTINUOUS FEED, 3/4 HP MOTOR, AND STAINLESS STEEL GRINDING ELEMENTS WITH TWO STAINLESS STEEL 360° SWIVEL LUGS (2 YEAR WARRANTY).

7. SH-1: SHOWER: GROHE 1957800A FOUR HOLE BATHTUB FAUCET WITH HANDSHOWER, TEMPERATURE CONTROL MANUAL, WITH ADJUSTABLE LIMIT, INTEGRAL CHECKS, NON-REMOVABLE RED/ BLUE VISUAL COVER, SINGLE METAL LEVER HANDLE, SHOWERHEAD, ARM & FLANGE. (ASSE 1016)

8. BT-1: BATHTUB: DURAVIT MODEL 700407. 60"x32". . INTEGRAL OVERFLOW, MOLDED BACKREST, AND DURABLE SWIRL GLOSS FINISH. ORDER WITH DELTA TRINSIC MODEL T14459 SHOWER/TUB TRIM WITH PRESSURE BALANCED CARTRIDGE, TEMPERATURE CONTROL MANUAL, WITH ADJUSTABLE LIMIT, INTEGRAL CHECKS, NON-REMOVABLE RED/BLUE VISUAL COVER, SINGLE METAL LEVER HANDLE, SHOWERHEAD, ARM & FLANGE, AND TUB FILL. (ASSE 1016).

NOT FOR CONSTRUCTION

1014
OOMBRA PROJECT #

2857; 2863
EAST GRAND BLVD
DETROIT MI 48202

OWNER
METHOD DEVELOPMENT
607 SHELBY ST. SUITE 700
DETROIT, MI 48226

ARCHITECT
OOMBRA ARCHITECTS, LLC.
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Sellinger Associates, Inc.
CONSULTING ENGINEERS
19821 Farmington Rd
Livonia, Michigan 48152
PROJECT# 19-0203
TEL (248) 482-0045
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OOMBRA ARCHITECTS
OOMBRA ARCHITECTS, LLC.
PHILADELPHIA, PA
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215.948.2564

DRAWING ISSUE	DATE
FEASIBILITY DOCUMENTS	1.25.2019
95% SCHEMATIC DESIGN	5.10.2019
100% SCHEMATIC DOCUMENTS	6.06.2019
100% DESIGN DEVOLVEMENT	8.01.2019

PLUMBING SCHEDULES

P4.00

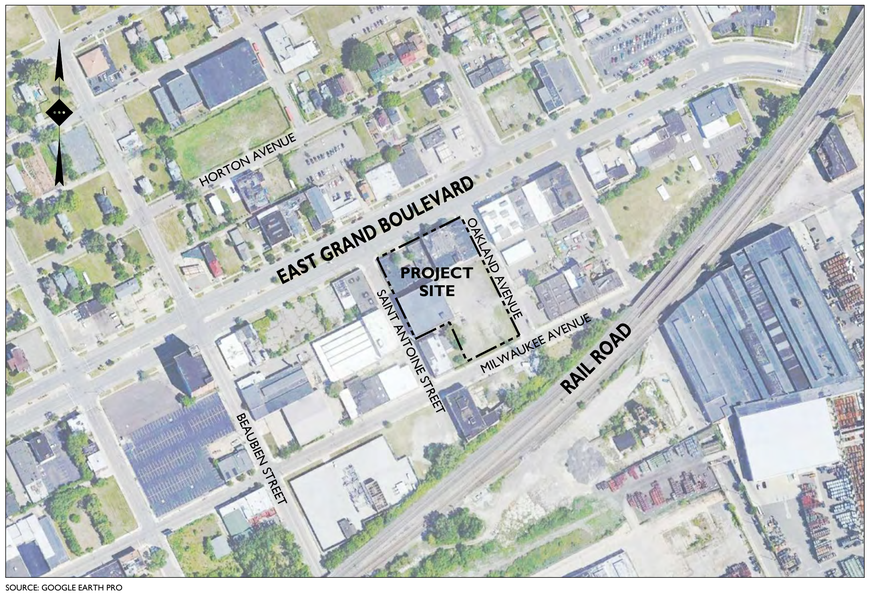
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SITE IMPROVEMENT PLANS
FOR
MILWAUKEE JUNCTION
MIXED-USE DEVELOPMENT



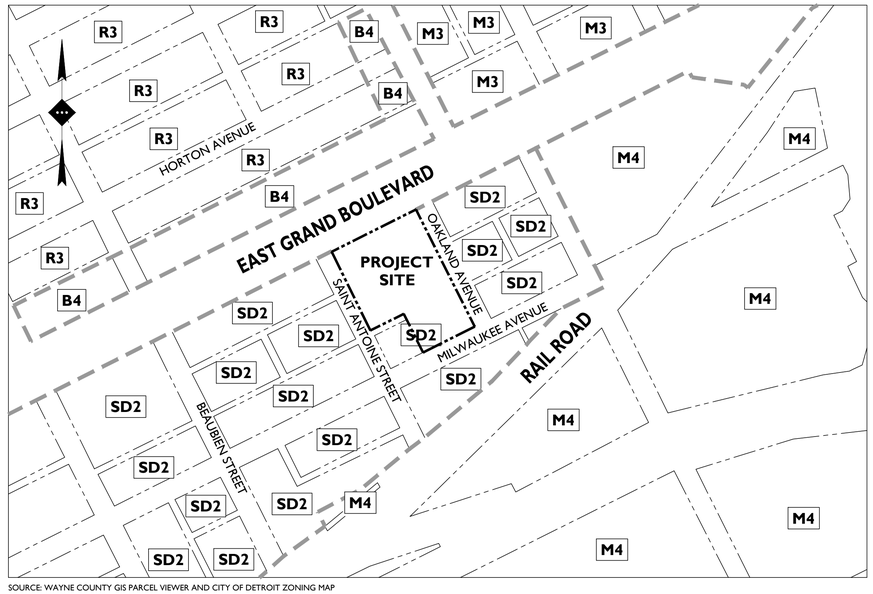
SOURCE: USGS ONLINE MAPS

LOCATION / KEY MAP
SCALE: 1" = 2000'±



SOURCE: GOOGLE EARTH PRO

AERIAL MAP
SCALE: 1" = 200'±



SOURCE: WAYNE COUNTY GIS PARCEL VIEWER AND CITY OF DETROIT ZONING MAP

ZONING MAP
SCALE: 1" = 200'±

PARCEL ID'S:
03001778-83, 03001789, 03001790, 03001791, 03001792-3,
03003021.033L, 03003022, 03003023, 03003024, & 03003271

ADDRESSES:
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
627 EAST MILWAUKEE STREET
6540 SAINT ANTOINE
CITY OF DETROIT, WAYNE COUNTY, MICHIGAN

PLANS PREPARED BY:

STONEFIELD engineering & design

Detroit, MI · New York, NY
Princeton, NJ · Tampa, FL · Rutherford, NJ
www.stonefieldeng.com

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MEP ENGINEER
ETS ENGINEERING, INC.
P.O. BOX 1116 ROYAL OAK, MI 48068
418-1/2 SOUTH WASHINGTON
PHONE:248.744.0360

PLAN REFERENCE MATERIALS:

1. THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - ALTA SURVEY COMPLETED BY KEM-TEC DATED 05/14/2019
 - ARCHITECTURAL PLANS PREPARED BY OOMBRA ARCHITECTS DATED 06/28/2019
 - AERIAL MAP FROM GOOGLE EARTH PRO
 - LOCATION MAP FROM USGS ONLINE MAPS
 - GEOTECHNICAL REPORT
 - ENVIRONMENTAL REPORT
 - ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.

SHEET INDEX

DRAWING TITLE	SHEET #
COVER SHEET	C-1
DEMOLITION PLAN	C-2
SITE PLAN	C-3
GRADING PLAN	C-4
STORMWATER MANAGEMENT PLAN	C-5
UTILITY PLAN	C-6
LIGHTING PLAN	C-7
SOIL EROSION & SEDIMENT CONTROL PLAN	C-8
LANDSCAPING PLAN	C-9
CONSTRUCTION DETAILS	C-10 - C-12

ADDITIONAL SHEETS

DRAWING TITLE	SHEET #
ALTA SURVEY	1 OF 1

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03003021.033L, 03003022, 03003023, 03003024, & 03003271
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6527, 6535, 6539 & 6545 OAKLAND STREET
627 EAST MILWAUKEE STREET
6540 SAINT ANTOINE
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

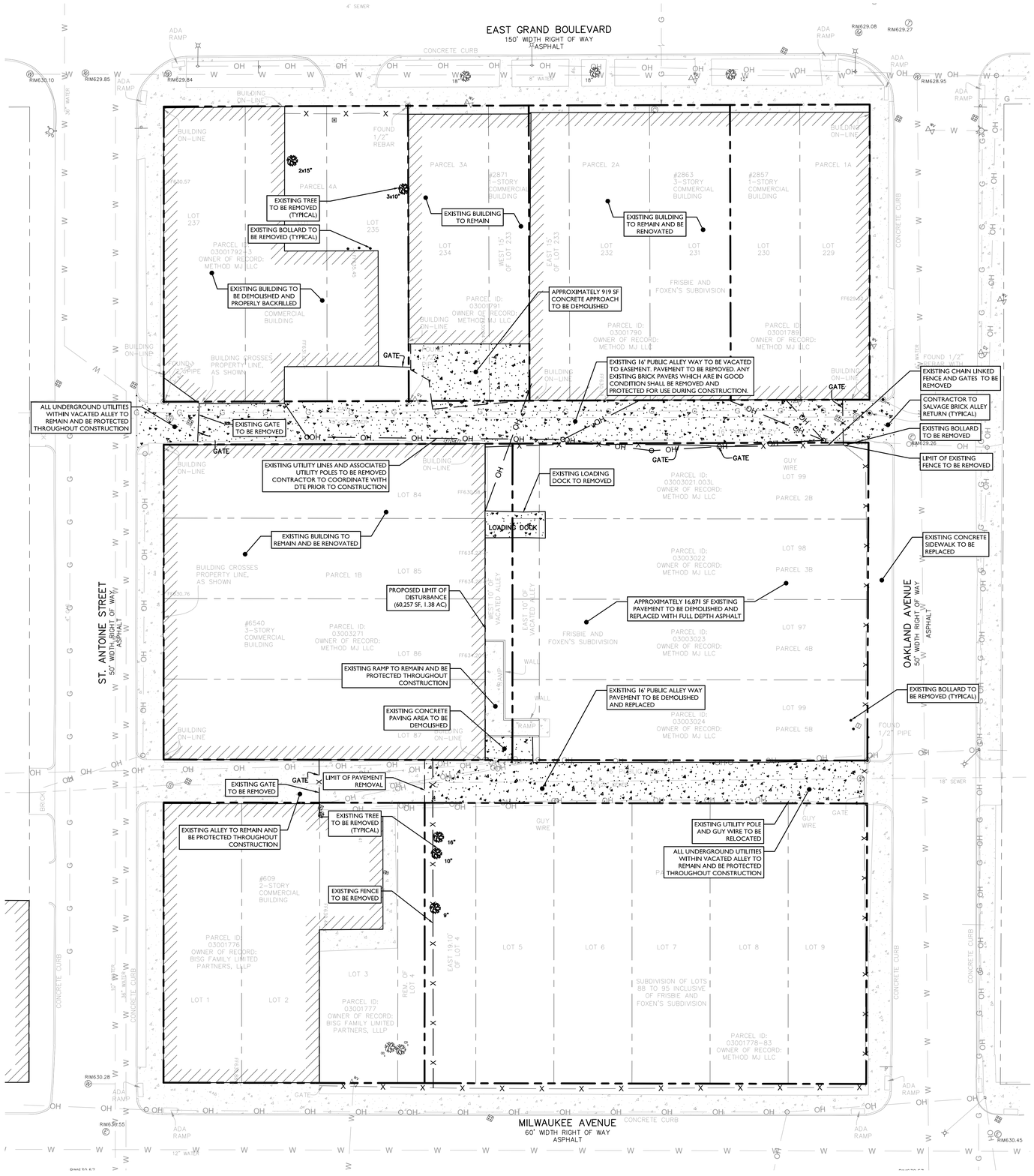
STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: M-19080

TITLE: COVER SHEET

DRAWING: C-1

V:\M19\PVA\19080-METHOD DEVELOPMENT-2887 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOTS\PVA\COVER.DWG



SYMBOL	DESCRIPTION
– – — – –	FEATURE TO BE REMOVED / DEMOLISHED

ALL SITE FEATURES WITHIN THIS PLAN ARE TO REMAIN AND BE PROTECTED UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS

811 Know what's **below** **Call** before you dig.

DEMOLITION NOTES

1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITY'S REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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www.stonefieldeng.com
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Phone 248.247.1115

SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03003021.003L, 03003022, 03003023, 03003024, & 01003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
621 EAST MILWAUKEE STREET
6540 ST. ANTOINE STREET
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: **DEMOLITION PLAN**

DRAWING: **C-2**

V:\PROJ\19\M-19080 METHOD DEVELOPMENT 2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOT\SP-03-DEMOLISHING

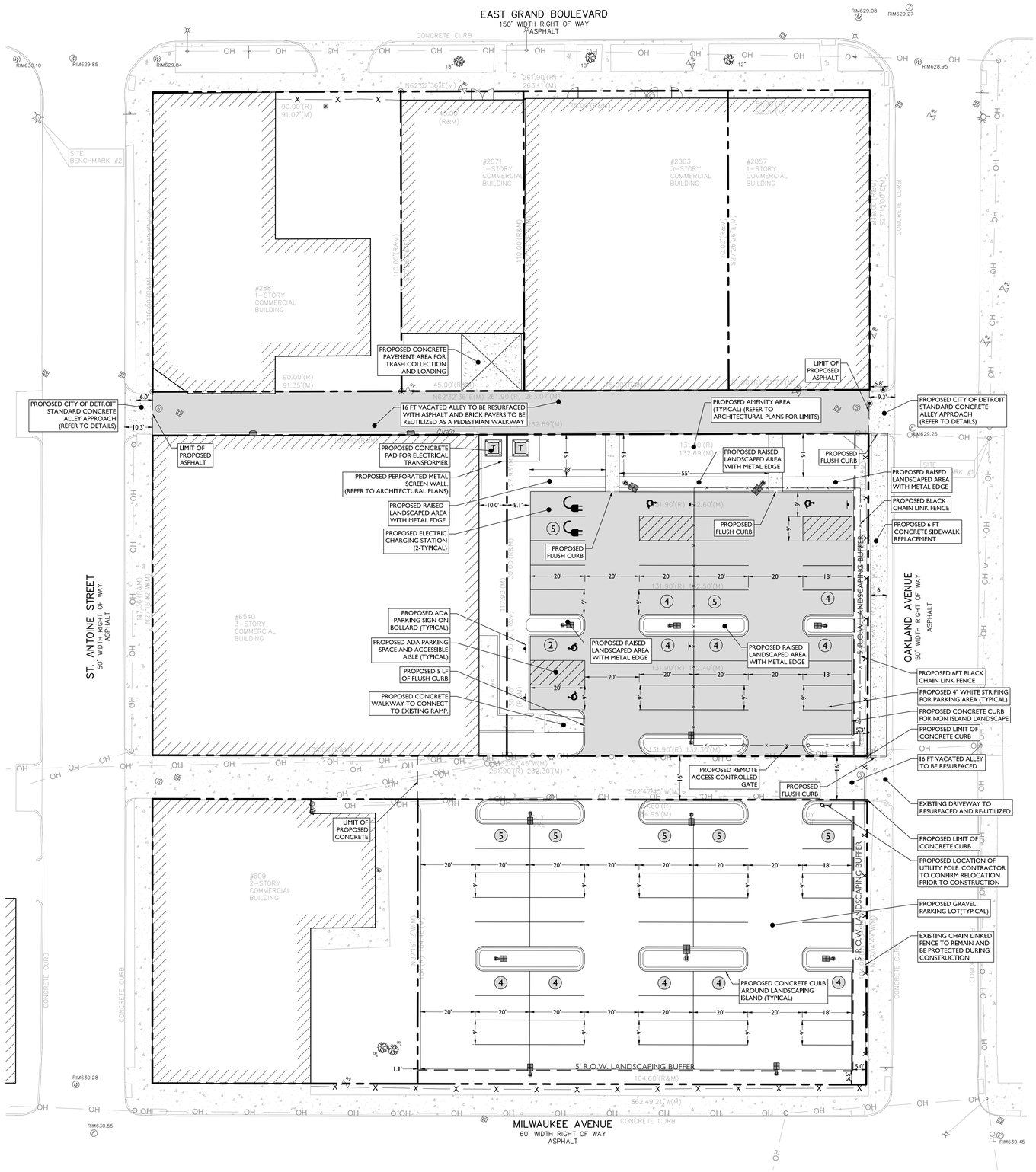


TABLE OF LAND USE AND ZONING

PARCEL ID: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03003021.03L, 03003022, 03003023, 03003024, 03003271

SPECIAL DEVELOPMENT DISTRICT, MIXED USE (SD2)

PROPOSED USE	
MULTI-FAMILY DWELLINGS*	PERMITTED USE*
RESTAURANT	PERMITTED USE
SPEAKEASY	PERMITTED USE
THEATER, 300 SEATS	CONDITIONAL USE**
RETAIL	PERMITTED USE
PARKING LOT	PERMITTED USE

ZONING REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA	7,000 SF	15,660 SF
MINIMUM LOT WIDTH	70 FT	104.54 FT
MAXIMUM BUILDING HEIGHT	60 FT (5 STORIES)	< 60 FT
MINIMUM FRONT YARD SETBACK	0 FT	0 FT
MAXIMUM FRONT YARD SETBACK	20 FT	0 FT (EN)
MINIMUM SIDE YARD SETBACK	0 FT	0 FT
MINIMUM REAR YARD SETBACK	10 FT	0 FT (EN)
MINIMUM R.O.W. LANDSCAPING BUFFER	5 FT	5.0 FT

(EN) EXISTING NON-CONFORMITY

(*) MULTI-FAMILY DWELLINGS PERMITTED IN STRUCTURES WHERE THE FIRST FLOOR IS MADE UP OF COMMERCIAL USES

(**) THEATERS ONLY PERMITTED UP TO 150 SEATS

OFF-STREET PARKING REQUIREMENTS

CODE SECTION	REQUIRED*	PROPOSED
§ 61-14-24	MULTI-FAMILY DWELLINGS PARKING REQUIREMENT**: 0.75 SPACES PER DWELLING UNIT (18 UNITS)(0.75) = 14 SPACES RESTAURANT PARKING REQUIREMENT**: 3 SPACES FOR THE FIRST 500 SF PLUS 1 SPACE PER EVERY 100 SF OVER 500 SF 3 SPACES + (3,005 SF)(1/100 SF) = 33 SPACES (0.75)(33 SPACES) = 25 SPACES SPEAKEASY PARKING REQUIREMENT**: 3 SPACES PLUS 1 SPACE PER 100 SF OVER 1,000 SF 3 SPACES + (787 SF)(1/100 SF) = 13 SPACES (0.75)(13 SPACES) = 10 SPACES THEATRE PARKING REQUIREMENT**: 1 SPACE PER 4 SEATS (300 SEATS)(1/4 SEATS) = 75 SPACES (0.75)(75 SPACES) = 56 SPACES RETAIL PARKING REQUIREMENT**: NONE **TOTAL: 14 + 25 + 13 + 56 = 108 SPACES****	73 SPACES
§ 61-14-151	90° PARKING DIMENSIONS*: 9 FT X 20 FT W/ 20 FT DRIVE AISLE	9 FT X 18 FT W/ 20 FT DRIVE AISLE
§ 61-14-84	LOADING ZONE REQUIREMENTS: ONE 12 FT X 55 FT SPACE	PROVIDED

(*) §61-14-151: WHERE A PARKING SPACE ABUTS A LANDSCAPE ISLAND OR PLANETER, THE FRONT TWO (2) FEET OF THE REQUIRED PARKING SPACE LENGTH MAY OVERHANG THE PLANTER, PROVIDED, THAT WHEEL STOPS OR 6 INCH CURBING ARE PROVIDED TO PROTECT THE LANDSCAPED AREA.

(**) §61-14-7. NO ADDITIONAL OFF-STREET PARKING, BEYOND THAT ALREADY PROVIDED, SHALL BE REQUIRED FOR STRUCTURES ERECTED PRIOR TO APRIL 9, 1998, OTHER THAN RELIGIOUS INSTITUTIONS, THAT DO NOT EXCEED THREE THOUSAND (3,000) SQUARE FEET OF GROSS FLOOR AREA.

SYMBOL / DESCRIPTION

- PROPERTY LINE
- SETBACK LINE
- PROPOSED CURB
- PROPOSED FLUSH CURB
- PROPOSED SIGNS / BOLLARDS
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED PEA GRAVEL
- PROPOSED AREA LIGHT
- PROPOSED FENCE

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
3. ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC. AND IT'S SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
4. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
6. THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
7. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTORS EXPENSE.
8. CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC. WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
10. THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
11. THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
12. SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC. BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.

20' 0' 20' 40'

GRAPHIC SCALE IN FEET
1" = 20'

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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION

PROPOSED MULTI-PURPOSE BUILDING

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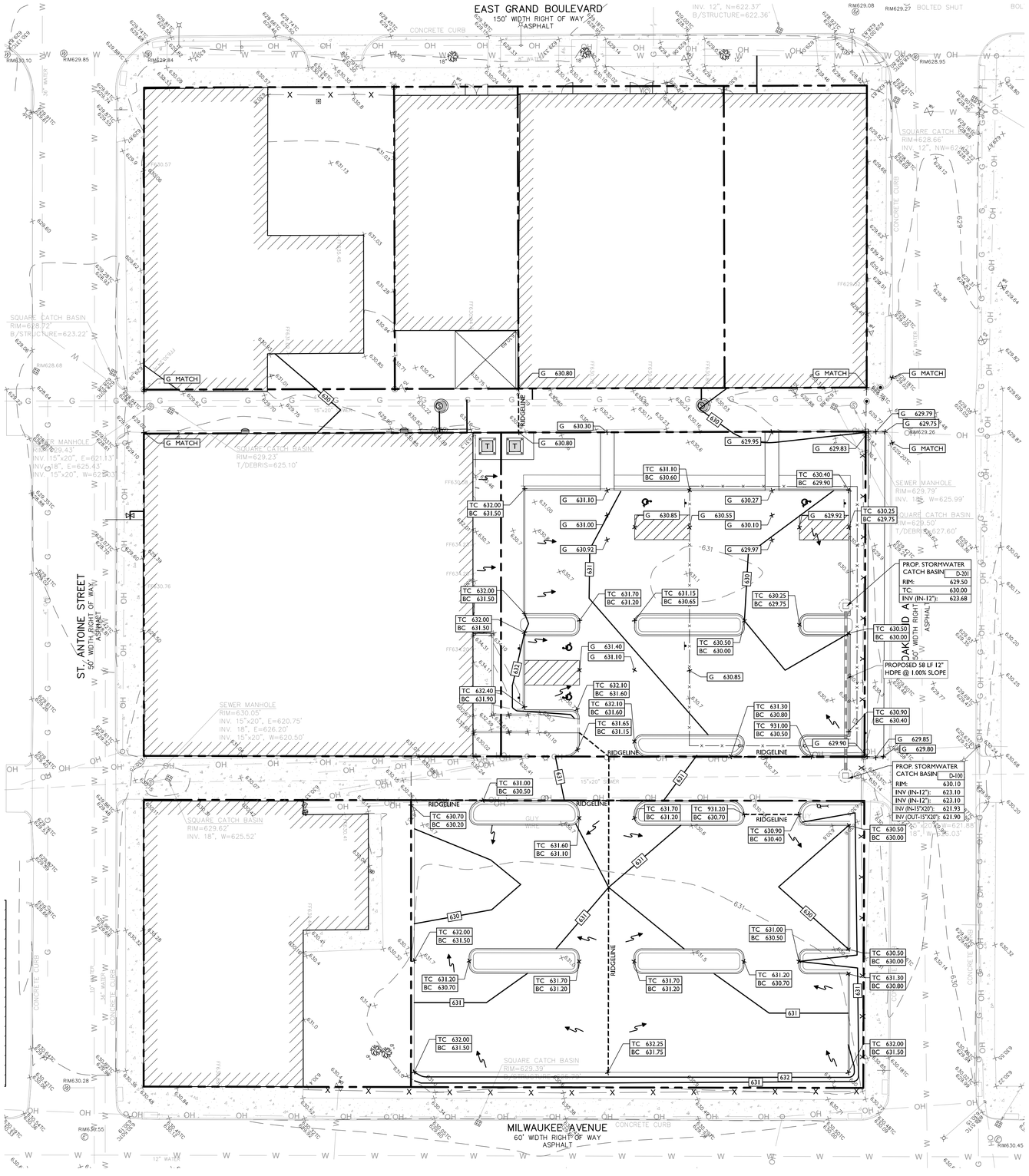
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SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: SITE PLAN

DRAWING: C-3

V:\M\2019\M-19080\METHOD DEVELOPMENT\2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOTTER\SITE.DWG



SYMBOL / DESCRIPTION

SYMBOL	DESCRIPTION
	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
RIDGELINE	PROPOSED GRADING RIDGELINE
	PROPOSED DIRECTION OF DRAINAGE FLOW
G 100.00	PROPOSED GRADE SPOT SHOT
TC 100.50 BC 100.00	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
2. CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UP-GRADIENT.
3. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
4. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES

1. THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION. THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
2. THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL. SHORING DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC. AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.

GRADING NOTES

1. ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
2. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES, INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES, TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
3. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC. FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
4. THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL, COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
5. MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
 - CURB GUTTER: 0.50%
 - CONCRETE SURFACES: 1.00%
 - ASPHALT SURFACES: 1.00%
6. A MINIMUM SLOPE OF 1.00% SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF THIS CONDITION CANNOT BE MET.
7. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWED/APPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.

ADA NOTES

5. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
6. THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
7. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
8. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP, AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL. THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
9. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 8.33% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00% IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP. FOR ALTERATIONS, A CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURBS RAMPS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
10. ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30" IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
11. A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
12. THE CONTRACTOR SHALL ENSURE A MAXIMUM OF ¼ INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN ¼ INCHES AND ½ INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP ½ INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
13. THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN ½ INCH.

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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www.stonefieldeng.com
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03001021, 1031, 01003022, 03003023, 03003024, & 01003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
626 EAST MILWAUKEE STREET
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

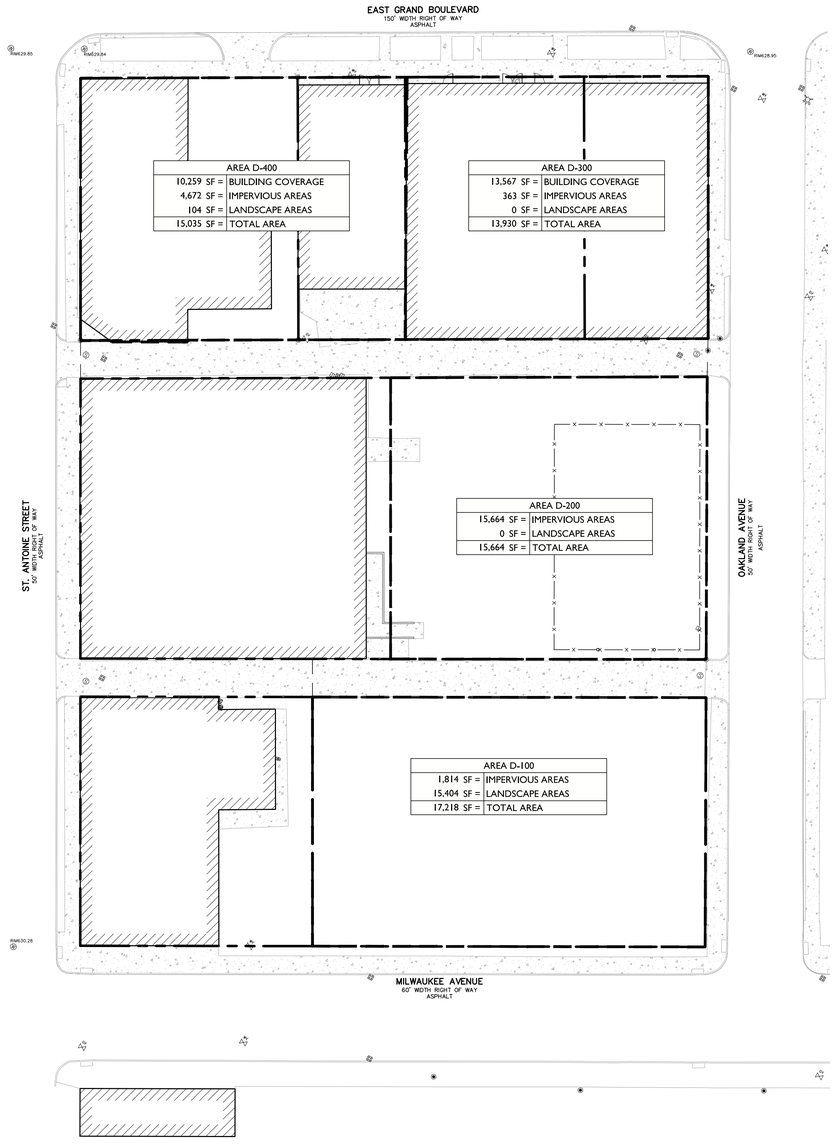
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: M-19080

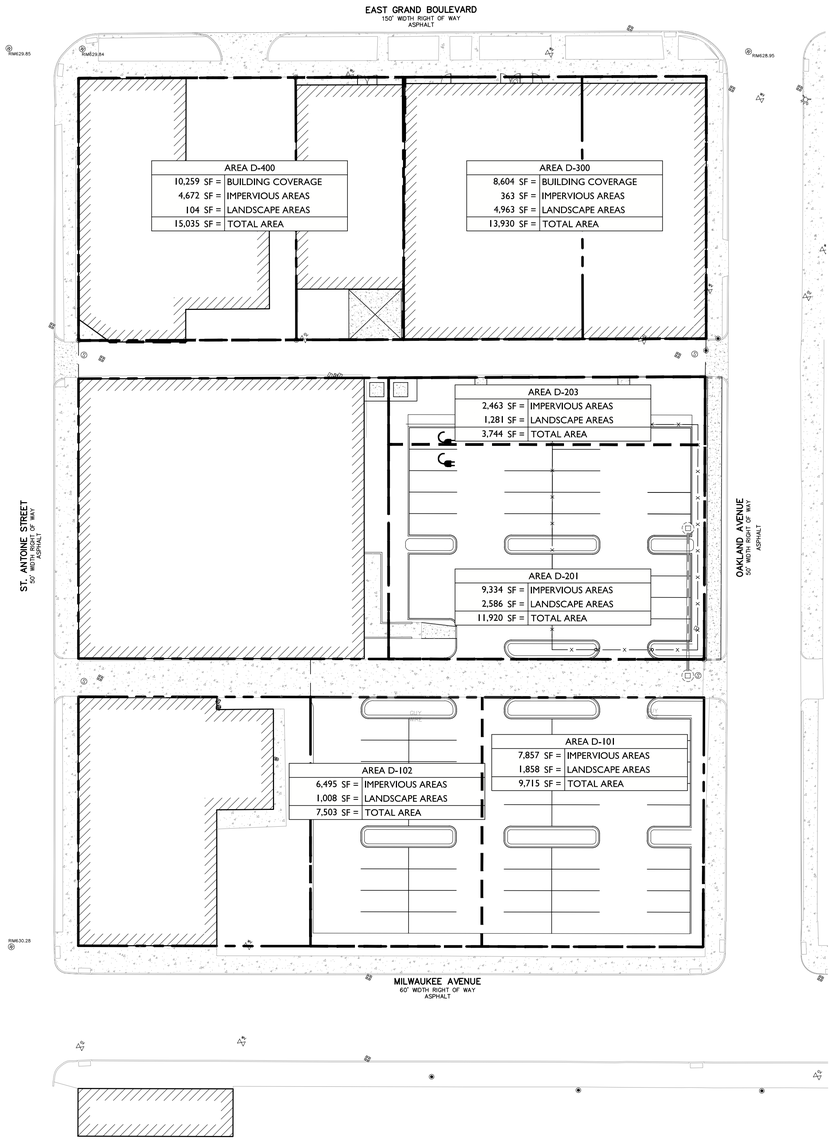
TITLE: GRADING PLAN

DRAWING: C-4

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PRE-DEVELOPMENT DRAINAGE MAP



POST-DEVELOPMENT DRAINAGE MAP

SYMBOL	DESCRIPTION
	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
RIDGELINE	PROPOSED GRADING RIDGELINE
	PROPOSED STORMWATER STRUCTURES
	PROPOSED STORMWATER PIPING

GREENSPACE SUMMARY

LANDCOVER	PRE-DEVELOPMENT	POST-DEVELOPMENT
BUILDING / ROOF	23,826 SF	18,863 SF
PAVEMENT / HARDSCAPE *	22,513 SF	31,204 SF
GREENSPACE	15,508 SF	11,780 SF
SUBTOTALS	61,847 SF	61,847 SF

§ 2.1.1 ANY DEVELOPMENT THAT INVOLVES THE CREATION OF ONE-HALF ACRE (21,780 SF) OR MORE OF IMPERVIOUS SURFACE IS SUBJECT TO DETROIT POST-CONSTRUCTION STORMWATER MANAGEMENT REQUIREMENTS.

(31,204 SF + 18,863 SF) - (23,826 SF + 22,513 SF) = 3,728 SF

3,728 SF < 21,780 SF; THEREFORE NOT REQUIRED TO PROVIDE STORMWATER MANAGEMENT.

30' 0' 30' 60'
GRAPHIC SCALE IN FEET
1" = 30'

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03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

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2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
627 EAST MILWAUKEE STREET
6454 MILWAUKEE AVENUE
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

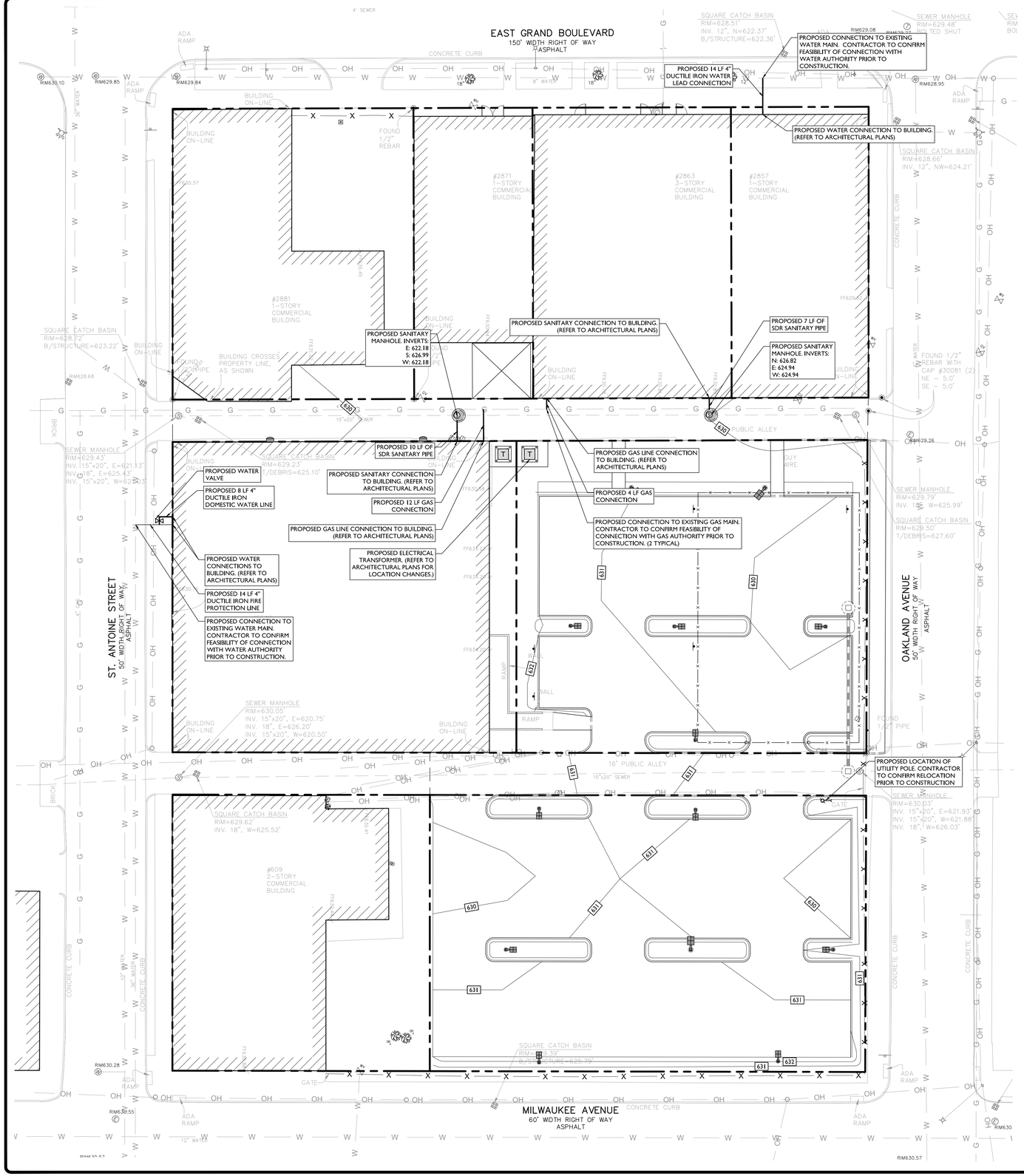
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SCALE: 1" = 30' | PROJECT ID: M-19080

TITLE: STORMWATER MANAGEMENT PLAN

DRAWING: C-5

V:\M\2019\M-19080\METHOD DEVELOPMENT\ 2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOT\DP165-STM.DWG



SYMBOL	DESCRIPTION
———	PROPERTY LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
E/T/C	PROPOSED ELECTRICAL/DATA CONDUITS
G	PROPOSED GAS LINE
⋈	PROPOSED VALVE
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
2. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
4. A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
6. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
8. CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADIENT.
9. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION

PROPOSED MULTI-PURPOSE BUILDING

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CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

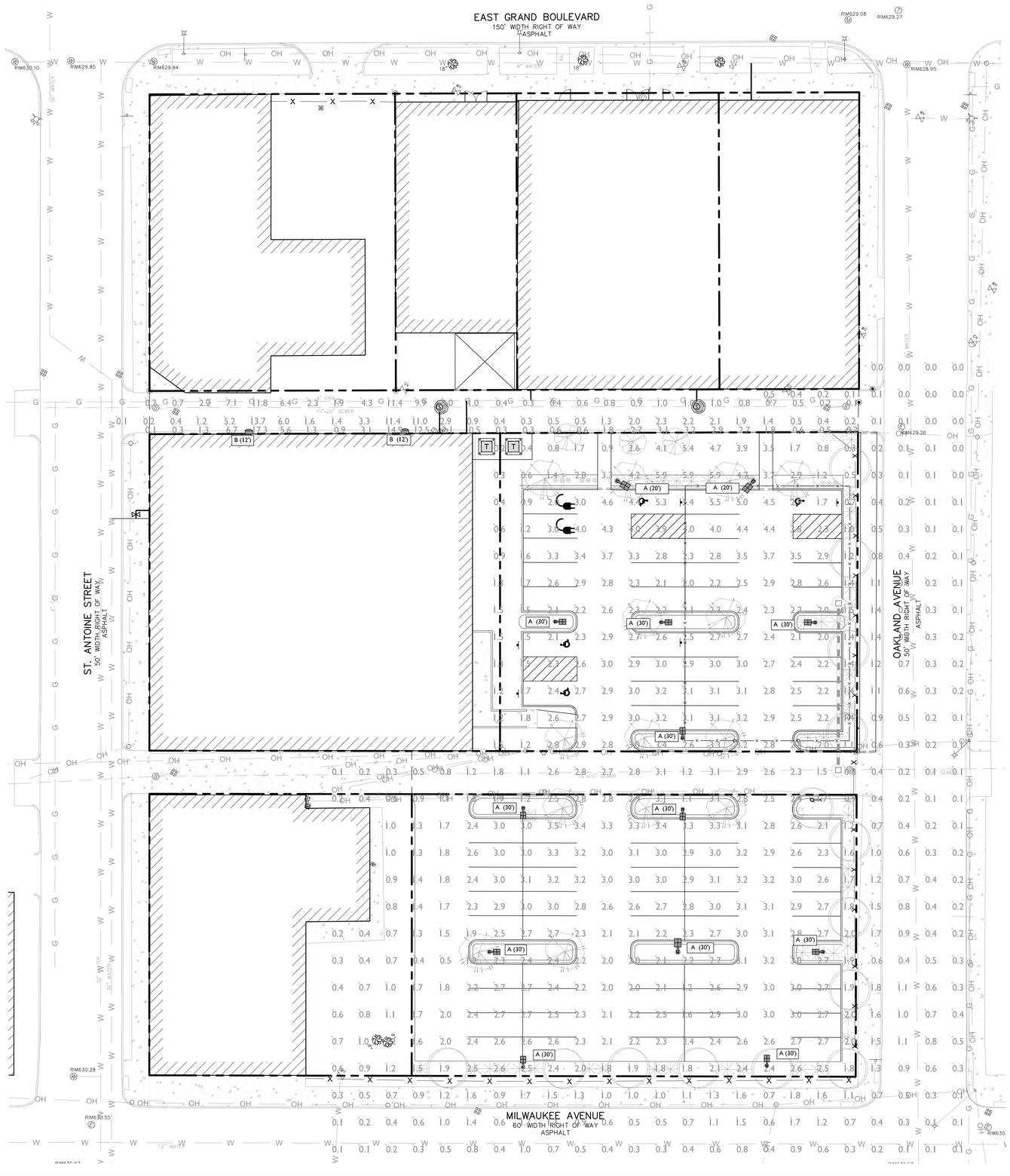
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SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: UTILITY PLAN

DRAWING: C-6

V:\M\2019\19080\METHOD DEVELOPMENT\2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOT\SP-MUTIL.DWG



SYMBOL / DESCRIPTION

SYMBOL	DESCRIPTION
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
X.X	PROPOSED LIGHTING INTENSITY (FOOTCANDLES)
	PROPOSED AREA LIGHT
	PROPOSED WALL LIGHT

PROPOSED LUMINARIES SCHEDULE

SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	WATTS	MANUFACTURER	IES FILE
	A	13	SLICE MEDIUM SERIES OUTDOOR LED AREA LIGHT 9L LUMEN PACKAGE	2	0.90	68	LSI INDUSTRIES	SLM-LED-09L-SIL-2-50-70CRI
	B	2	C-LITE SERIES TRADITIONAL STYLE LED WALLPACK 15L LUMEN PACKAGE	5	0.90	119	CREE LIGHTING	C-WP-A-TR-15L-40K-DB

LIGHTING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 61-14-156	REQUIRED RANGE OF ILLUMINATION LEVELS: MAIN PARKING AREA: 2.0 - 10.0 FC	COMPLIES
§ 61-13-146	REQUIRED FIXTURE SETBACK: FIXTURES MAY NOT BE LESS THAN 3 FT FROM ANY LOT LINE	COMPLIES

GENERAL LIGHTING NOTES

1. THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH ARE WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
2. WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
3. UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
 - LIGHT EMITTING DIODES (LED): 0.90
4. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING/ PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS.
5. THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

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03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03001021.1003L, 01003022, 03003023, 03003024, & 03003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
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CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
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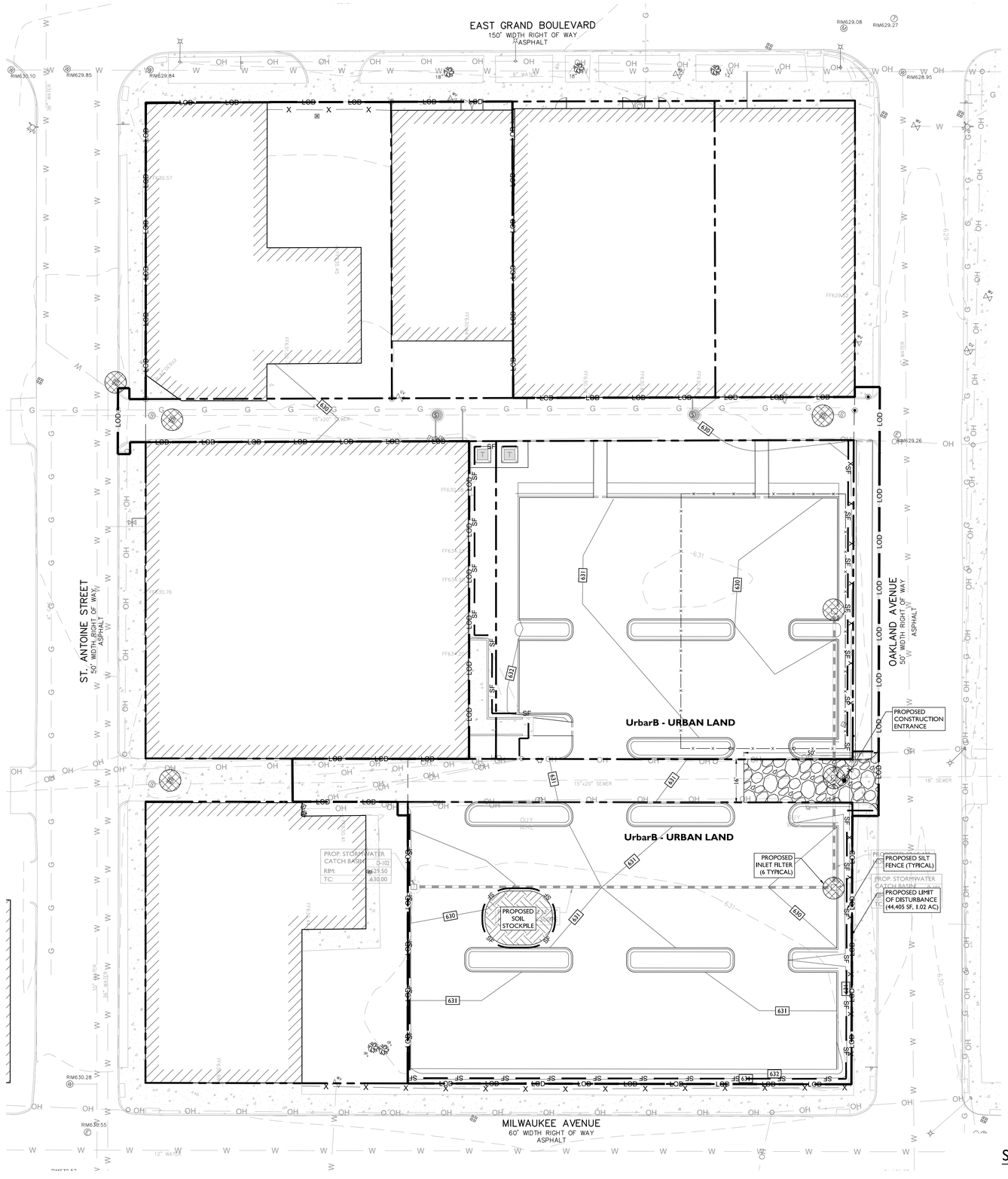
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: LIGHTING PLAN

DRAWING: C-7

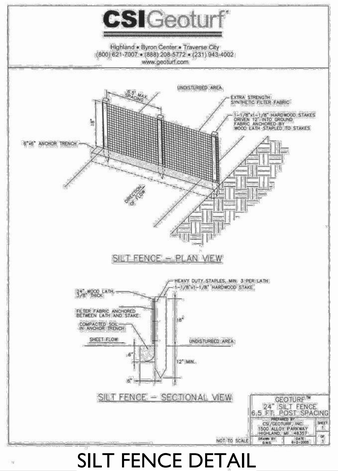
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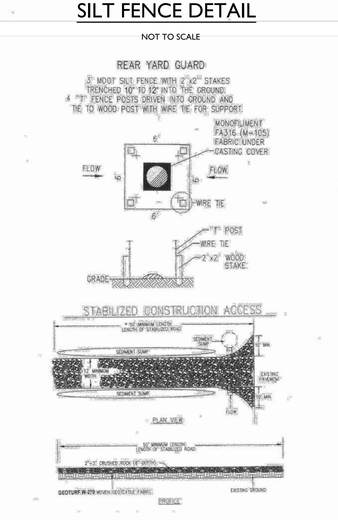
INLET FILTER DETAIL

NOT TO SCALE



SILT FENCE DETAIL

NOT TO SCALE



STABILIZED CONSTRUCTION ACCESS DETAIL

NOT TO SCALE

SYMBOL	DESCRIPTION
	PROPERTY BOUNDARY
	ADJACENT PROPERTY BOUNDARY
LOD	PROPOSED LIMIT OF DISTURBANCE
SF	PROPOSED SILT FENCE
	PROPOSED STOCKPILE & EQUIPMENT STORAGE
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED INLET PROTECTION FILTER

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.
4. SESC MEASURES ON THE PLAN SHALL BE CONSIDERED THE MINIMUM MEASURES REQUIRED.

WAYNE COUNTY SESC MAINTENANCE REQUIREMENTS

1. THE STREETS SHOULD BE SCRAPED DAILY.
2. THE STREETS SHOULD BE SWEPT WEEKLY OR AS NEEDED.
3. STRUCTURAL SEDIMENT CONTROLS SHOULD BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AN AFTER A RAIN EVENT.

FLOOD HAZARD AREA NOTES:

1. THERE ARE NO RIPARIAN ZONES ON SITE.
2. THERE ARE NO FLOODWAYS ON SITE.
3. ALL ELEVATIONS SHOWN ARE BASED ON NAVD 88 DATUM.

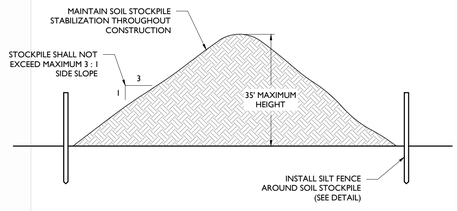
SEQUENCE OF CONSTRUCTION

1. INSTALL INLET FILTERS ON EXISTING CATCH BASINS (1 DAY).
2. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE (2 DAYS).
3. DEMOLISH EXISTING PAVEMENT AND GRAVEL (7 DAYS).
4. ROUGH GRADING AND TEMPORARY SEEDING (7 DAYS)
5. EXCAVATE AND INSTALL DRAINAGE PIPING AND DRAINS (7 DAYS).
6. INSTALL INLET FILTERS ON NEW CATCH BASIN (1 DAY).
7. BUILDING CONSTRUCTION AND SITE IMPROVEMENTS (90 DAYS).
8. CONSTRUCT RIGHT OF WAY IMPROVEMENTS (2 DAYS).
9. LANDSCAPING IMPROVEMENTS AND FINAL SEEDING (7 DAYS).
10. REMOVE SOIL EROSION MEASURES (1 DAY).

NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUILE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO TOWNSHIP AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY

SOIL CHARACTERISTICS CHART

TYPE OF SOIL	URBAN LAND-RIVERFRONT COMPLEX (UrbarB)
HYDROLOGIC SOIL GROUP	B
DEPTH TO RESTRICTIVE LAYER	56 TO 78 INCHES TO DENSIC MATERIAL
SOIL PERMEABILITY	0.00 TO 0.00 IN/HR
DEPTH TO WATER TABLE	> 80 INCHES



NOTES:
1. STOCKPILES SHALL BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
2. STOCKPILES SHALL BE STABILIZED IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, AS APPROPRIATE (SEE SOIL EROSION NOTES).

SOIL STOCKPILE DETAIL

NOT TO SCALE

20' 0' 20' 40'

GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
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03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778.83, 03001789, 03001790, 03001791, 03001792-3, 03001021.1003L, 03003022, 03003023, 03003024, & 03003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
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CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

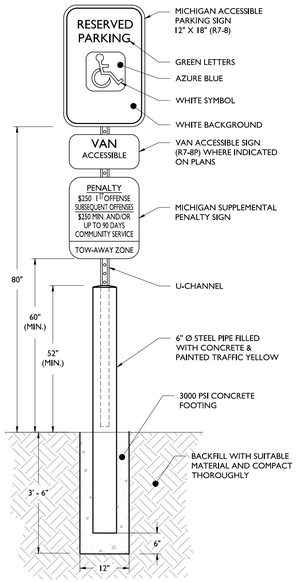
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: SOIL EROSION & SEDIMENT CONTROL PLAN

DRAWING: C-8

V:\PROJECTS\M-19080-METHOD DEVELOPMENT\2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOTS\P-08 SESC.DWG

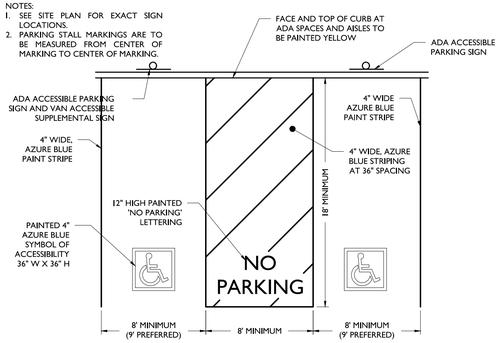


ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL

NOT TO SCALE

1

NOTES:
1. SEE SITE PLAN FOR EXACT SIGN LOCATIONS.
2. PARKING STALL MARKINGS ARE TO BE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING.



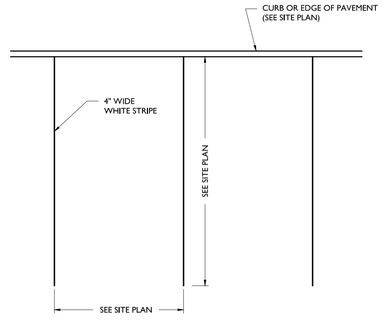
ACCESSIBLE PARKING STALL MARKINGS

NOT TO SCALE

2

PAVEMENT STRIPING & MARKINGS NOTES:
1. ALL SIGNING AND STRIPING IN EXISTING CONDITION IN CONFLICT WITH THE PROPOSED DESIGN PLAN SHALL BE REMOVED.
2. ALL PROPOSED SIGNING AND STRIPING SHALL CONFORM TO THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
3. PAVEMENT STRIPING AND MARKINGS SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS.
4. UNLESS OTHERWISE SPECIFIED, ALL STRIPING AND MARKINGS IN THE PUBLIC RIGHT-OF-WAY SHALL BE OF THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.
5. UNLESS OTHERWISE SPECIFIED, ON SITE PARKING STALL STRIPING, FIRE LANE STRIPING AND DIRECTIONAL ARROWS SHALL BE EPOXY PAINT. ON SITE STOP BARS, "DO NOT ENTER" BARS, AND ASSOCIATED LETTERING SHALL BE THERMOPLASTIC PAINT OR PREFORMED THERMOPLASTIC MARKINGS.

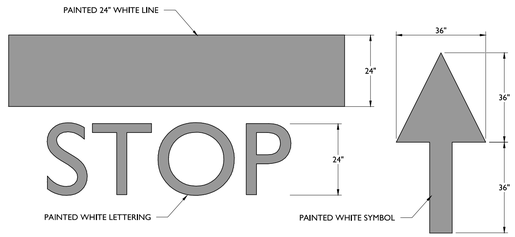
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PARKING STALL MARKINGS

NOT TO SCALE

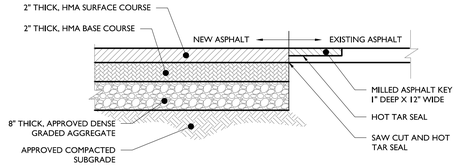
4



STOP BAR & ARROW DETAILS

NOT TO SCALE

5

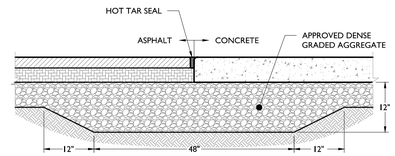


FULL DEPTH ASPHALT PAVEMENT DETAIL

NOT TO SCALE

NOTE:
1. HMA MIX AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
2. THIS CROSS-SECTION SHALL SERVE AS A MINIMUM. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT PRIOR TO THE START OF CONSTRUCTION.

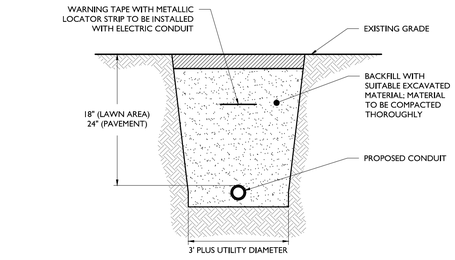
6



CONCRETE TO ASPHALT TRANSITION DETAIL

NOT TO SCALE

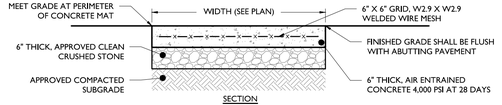
7



ELECTRICAL CONDUIT TRENCH DETAIL

NOT TO SCALE

8



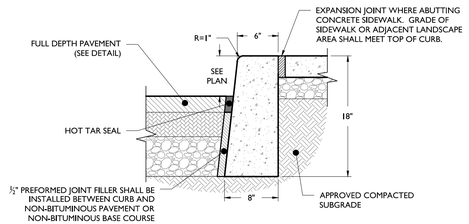
SECTION

REINFORCED 6" CONCRETE MAT

NOT TO SCALE

NOTES:
1. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ½" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY ¼" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
3. CONCRETE SHALL RECEIVE BROOM FINISH.
4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

8

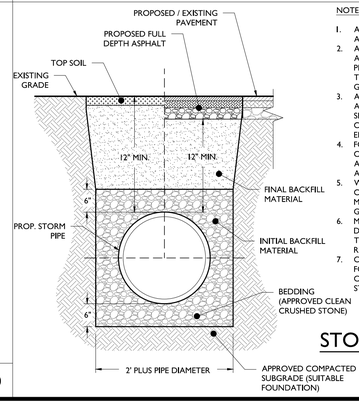


CONCRETE CURB DETAIL

NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ½" FROM SURFACE.
3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
4. 18" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.

9

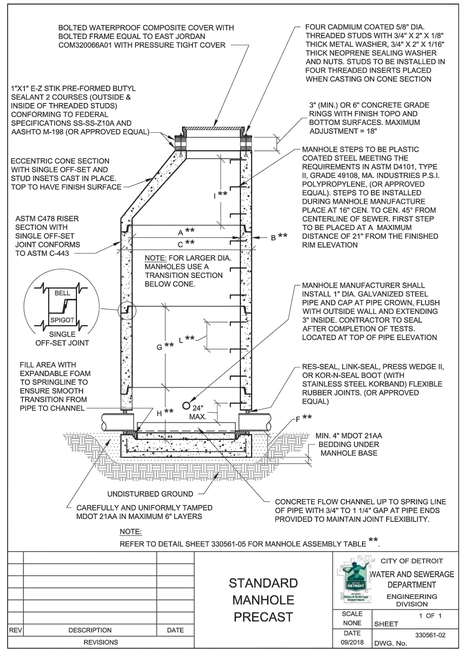


NOTES:
1. ALL PIPE SYSTEM INSTALLATIONS SHALL MEET ALL APPLICABLE STANDARDS AND SPECIFICATIONS.
2. ALL HDPE PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS" (LATEST EDITION).
3. ALL RCP PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C76-15, "STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE" (LATEST EDITION).
4. FOR NON HDPE OR RCP PIPE INSTALLATIONS, CONTRACTOR SHALL INSTALL PIPE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS AND SPECIFICATIONS.
5. WHERE THE TRENCH BOTTOM IS UNSTABLE, CONTRACTOR SHALL PROVIDE SUITABLE BACKFILL MATERIAL AS REQUIRED BY ENGINEER OR PER GEOTECH RECOMMENDATIONS.
6. MINIMUM COVER IN TRAFFIC AREAS IS 12" UP TO 48" DIAMETER PIPE AND 24" FOR 54" - 60" DIAMETER PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.
7. CONTRACTOR SHALL INSTALL SUITABLE MATERIAL FOR INITIAL AND FINAL BACKFILL. BACKFILL COMPACTION SHOULD MEET ALL APPLICABLE STANDARDS AND SPECIFICATIONS.

STORM TRENCH DETAIL

NOT TO SCALE

11



NOTE:
REFER TO DETAIL SHEET 330561-05 FOR MANHOLE ASSEMBLY TABLE **.

REV	DESCRIPTION	DATE
	REVISIONS	

STANDARD MANHOLE PRECAST

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION

SCALE: NONE | SHEET: 1 OF 1 | DATE: 09/2018 | DWG. No. 330561-02

A	RISER DIAMETER	IN	24	48	60	72	84	96	108	120
B	WALL THICKNESS	IN	3	5	6	7	8	9	9	10
C	OUTSIDE DIAMETER	IN	30	58	72	86	100	114	126	140
D	JOINT DEPTH	IN	2.75	2.75	4.75	5	5	5	5.25	7.5
E	-	-	-	-	-	-	-	-	-	-
F	INTEGRAL BASE	IN	6	8	8	8	8	8	8	8
G	RISER HEIGHTS	FT	2	1.33	1.33	1.33				
		FT	3	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		FT		4	4	4	4	4	4	4
		FT		5.33	5.33	5.33	5.33	5.33	5.33	5.33
		FT			8	8	8	8	8	
H	BASE HEIGHT RISER HEIGHTS CAN ALSO BE USED AS BASE SECTIONS	FT	2		2	2	2	2	2	2
		FT	3		3	3	3	3	3	3
		FT	4	3.33	3.33	3.33	3.33	3.33	3.33	3.33
		FT	4.5		3.67	3.67	3.67	3.67	3.67	3.67
		FT		4.67	4.67	4.67	4.67	4.67	4.67	4.67
		FT		5	5	5	5	5	5	5
		FT		6	6	6	6	6	6	6
		FT			7	7	7	7	7	
I	CONE HEIGHT TO 24"	FT			2.5	3				
					CON.	CON.				
				3						
				4						
	CONE HEIGHT TO 48"	FT			2.67	2.67				
K	LOOSE BASE - OUTSIDE DIA. 6" THK.	IN	44							
	8" THK.	IN	48	72	84	96				
	12" THK.	IN			84	96	108	120		156
L	STEP SPACING	IN		16	16	16	16	16	16	16
	APPROX. WEIGHT / FT.	LB	264	867	1295	1811	2409	3090	3400	4200

NOTES:
1. SOME DIMENSIONS MAY VARY BY MANUFACTURER. DESIGN ENGINEER SHALL ENSURE DETAIL MEETS AGENCY REQUIREMENTS.
2. SEE DETAIL SHEET 330561-02 FOR STANDARD MANHOLE PRECAST DESIGN.

MANHOLES ASTM C-478

WEIGHTS AND DIMENSIONS - US CUSTOMARY

REV	DESCRIPTION	DATE
	REVISIONS	

MANHOLE, ASSEMBLY

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION

SCALE: NONE | SHEET: 1 OF 1 | DATE: 09/2018 | DWG. No. 330561-05

CITY OF DETROIT MANHOLE AND ASSEMBLY DIMENSIONS DETAILS

NOT TO SCALE

12

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

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SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION
PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778-83, 03001789, 03001790, 03001791, 03001792-3, 03001301, 0031, 01003022, 03003023, 03003024, & 03003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
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CITY OF DETROIT
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MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

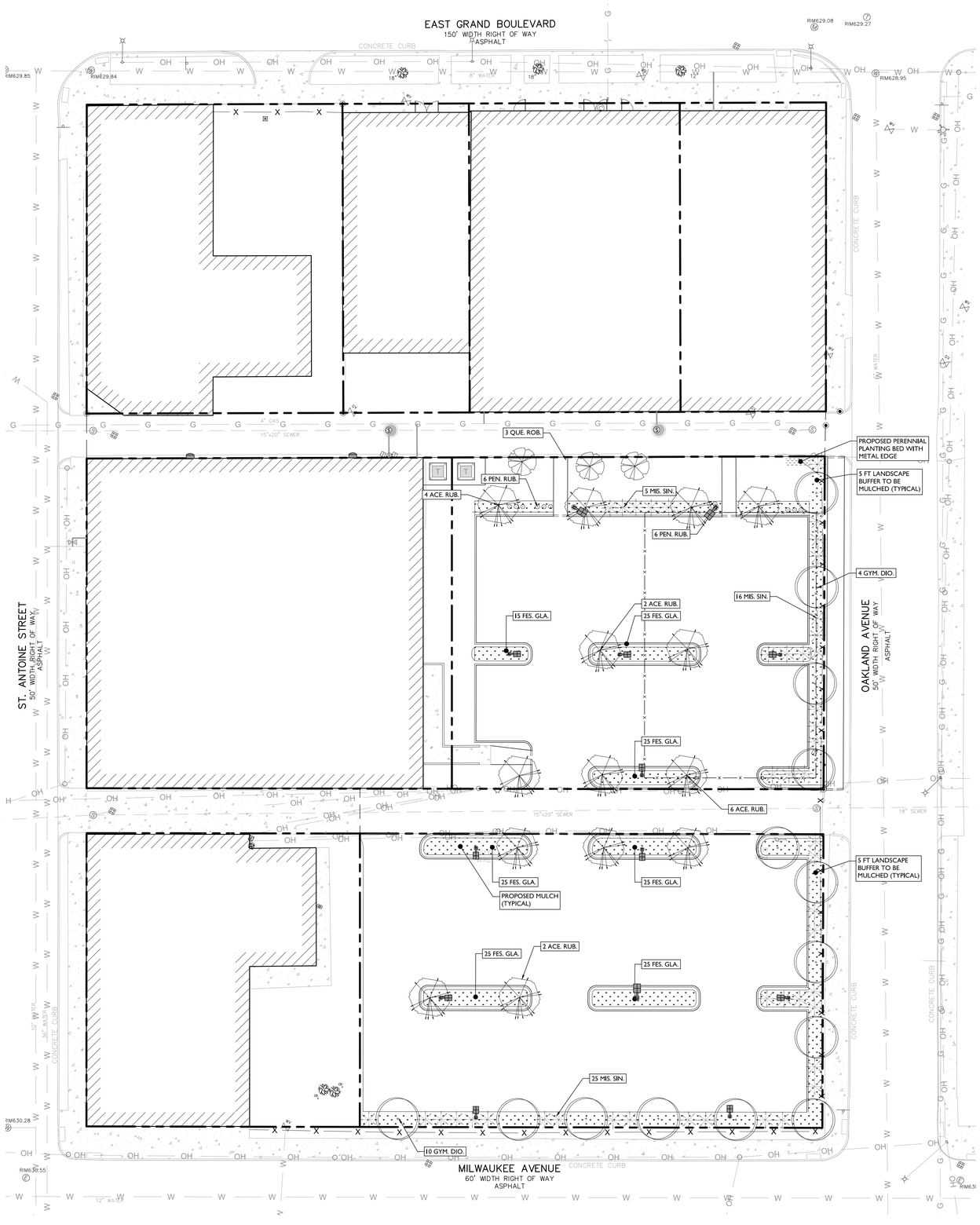
STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: M-19080

TITLE: CONSTRUCTION DETAILS

DRAWING: C-9

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SYMBOL	DESCRIPTION
	PROPOSED MULCH BED
	PROPOSED GRASS AREA
	PROPOSED PERENNIAL PLANTING BED

PLANT SCHEDULE

PLANT KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
DECIDUOUS TREES (31 TOTAL)					
ACE. RUB.	14	ACER RUBRUM 'FRANKSRED'	RED SUNSET RED MAPLE	3"-3.5" CAL.	B&B
GYM. DIO.	14	GYMNOCLADUS DIOICA	KENTUCKY COFFEETREE	2" CAL	B&B
QUE. ROB.	3	QUERCUS ROBUR X ALBA 'SKINNY GENES	SKINNY GENES OAK	3" CAL.	B&B
ORNAMENTAL GRASSES (211 TOTAL)					
MIS. SIN.	46	MISCANTHUS SINENSIS 'GRACILLIMUS'	MAIDEN GRASS	2'-5'	4' O.C
FES. GLA.	165	FESTUCA GLAUCA	BLUE FESCUE	6"-3'	18" O.C
PEN. RUB	12	PENNISETUM SETACEUM RUBRUM	PURPLE FOUNTAIN GRASS	3'-5'	2.5' O.C

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

LANDSCAPING AND BUFFER REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 61-14-221. (1.A)	REQUIRED STREET TREES: 1 TREE FOR EACH 30 LF OF LANDSCAPE BUFFER (387 LF)/(1/30 LF) = 13 TREES	13 TREES
§ 61-14-221. (1.B)	REQUIRED RIGHT OF WAY SCREENING: 30 - 36" VEGETATIVE SCREEN	PROVIDED
§ 61-14-223.(1)	REQUIRED INTERIOR PARKING LOT LANDSCAPING: 18 SF LANDSCAPED AREA PER PARKING SPACE (74 SPACES)(18 SF/SPACE) = 1,332 SF	1,654 SF
§ 61-14-223.(2)	LANDSCAPE ISLANDS MUST BE A MINIMUM OF 150 SF AND A MINIMUM DIMENSION OF 7 FT IN ANY DIRECTION AND CONTAIN ONE SHADE TREE	PROVIDED

IRRIGATION NOTE:

IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL. WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.

LANDSCAPING NOTES

1. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
2. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
3. THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH .
4. THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
6. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
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SITE IMPROVEMENT PLANS

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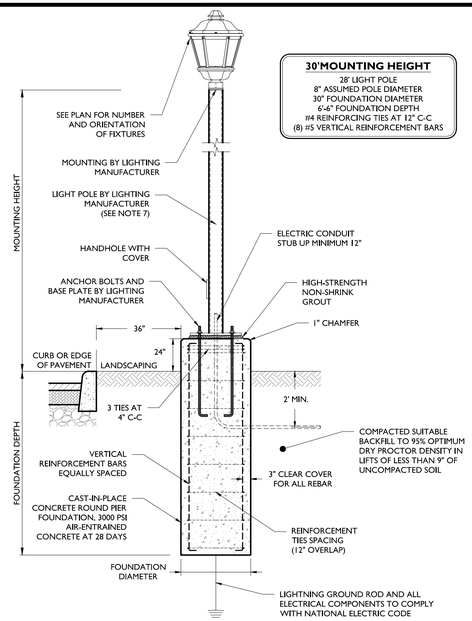
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: M-19080

TITLE: LANDSCAPING PLAN

DRAWING: C-9

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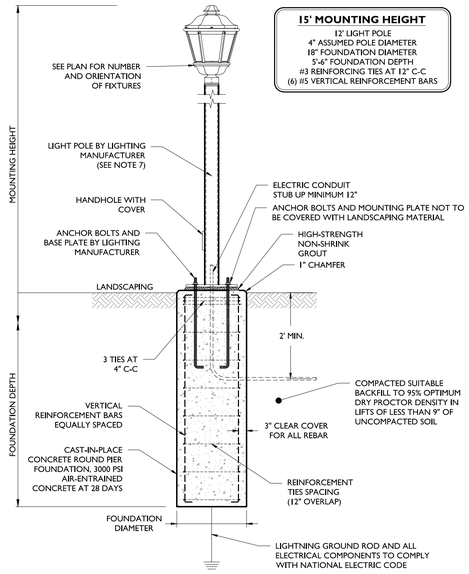
LIGHT POLE INSTALLATION DETAIL

NOT TO SCALE

NOTES:

1. MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
3. ALL REBAR TO BE NEW GRADE 60 STEEL.
4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
5. CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
7. POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
8. POUR TO BE TERMINATED AT A FORM.
9. WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
10. CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.

1



LIGHT POLE INSTALLATION DETAIL

NOT TO SCALE

NOTES:

1. MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
3. ALL REBAR TO BE NEW GRADE 60 STEEL.
4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
5. CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
7. POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
8. POUR TO BE TERMINATED AT A FORM.
9. WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
10. CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.

2



Slice Medium - SLM
Outdoor LED Area Light

The Slice's sleek design makes it perfectly-suited for Commercial & Industrial applications, while its cost-effective die-cast aluminum housing makes its acquisition cost very competitive. The Slice offers high performance silicone optics, die cast aluminum housing, 42,000+ lumens and is available with Integral Airlink Synapse controls.

Slice Medium - SLM
Outdoor LED Area Light

Features & Specifications (Cont.)

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Designed to mount to square poles.
- Luminaire is proudly manufactured in the U.S.of U.S. and imported parts.
- IP66 rated luminaire protects integral components from harsh environments.
- 3G rated for ANSI C136.31 high vibration applications
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 30 lbs in carton.

Controls

Wireless Controls System

To make this fixture AirLink ready, simply order one of the following options:

a. The integrated Wireless Lighting Controller: ALSC or ALSCH (see ordering guide) as the controls option, or

b. Integrated Wireless Controller option (above) with integrated motion sensor: ALSCS (ordering guide for mounting heights) or

c. The 7-Pin Photoelectric Control Receptacle: CR7P as the controls option; and either the 5-Pin or 7-Pin Twist Lock Controller: ALSC UNV TLS or ALSC UNV TL7 as an accessory

To see how the components of AirLink system work together, reference the diagram in the controls section of this specsheet. For more information on our AirLink products, visit our website: www.lsi-airlink.com/airlink-synapse/

Stand-Alone Controls

- The integral passive infrared motion sensor (IMS) activates switching of luminaire light levels (see the controls section for more details).
- The 7-pin ANSI C136.41-2013 photocontrol receptacle option (CR7P) is available for twist lock photocontrols or wireless control modules.
- The Button Type Photocells (PC) are capable of switching luminaires ON/OFF in response to the amount of available daylight.

Installation

- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment for installing/servicing.
- Included terminal block provides quick and easy on-site wiring.
- Utilizes LSI's traditional 3" drill pattern for easy fastening of LSI products. (See drawing on page 1)

Warranty

- LSI LED Fixtures carry a 5-year warranty.

Listings

- Listed to UL 1598 and UL 8750.
- RoHS Compliant.
- American Recovery and Reinvestment Act Funding Compliant.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable For wet Locations.
- IP66 rated Luminaire. IP66 rated optical chamber.
- 3G rated for ANSI C136.31 high vibration applications

Performance

ELECTRICAL DATA (AMPS)*

Lumens	Watts	120V	208V	240V	277V	347V	480V
9L	98.2	0.85	0.28	0.24	0.23	0.20	0.15
12L	99.1	0.84	0.44	0.40	0.34	0.28	0.20
15L	148.5	1.26	0.76	0.66	0.54	0.44	0.34
24L	188.8	1.64	0.94	0.84	0.74	0.54	0.44
28L	240.6	2.14	1.04	1.04	0.94	0.74	0.54
36L	317.8	2.84	1.54	1.34	1.14	0.96	0.74
42L	360.6	3.04	1.56	1.64	1.44	1.14	0.94

*Electrical data at 25C (77°). Actual wattage may differ by +/-10%

ELECTRICAL DATA - PHOSPHOR CONVERTED AMBER (AMPS)*

Lumens	Watts	120V	208V	240V	277V	347V	480V
9L	74.3	0.64	0.46	0.34	0.34	0.24	0.20
12L	102.9	0.94	0.54	0.44	0.44	0.34	0.24

*Electrical data at 25C (77°). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE*(24-42L)

Ambient	Initial†	25 hr†	50 hr†	75 hr†	100 hr†
0-40 C	100%	100%	97%	94%	92%

RECOMMENDED LUMEN MAINTENANCE*(9-18L)

Ambient	Initial†	25 hr†	50 hr†	75 hr†	100 hr†
0-50 C	100%	98%	91%	87%	82%

*- Lumen maintenance values at 25C are calculated per TM-21 based on LM-80 data and in-situ testing.
†- In accordance with IESNA TM-21-11. Projected values represent interpolated value based on time durations that are within six times the IESNA LM-80-08 total test duration for the device under testing.
†- In accordance with IESNA TM-21-11. Calculated Values represent time durations that exceed six times the IESNA LM-80-08 total test duration for the device under testing

DELIVERED LUMENS*

Lumen Package	Distribution	Phosphor Converted Amber (Peak 610nm) Delivered Lumens	Efficacy	BUG Rating	Wattage
9L	2	3267	85	B2-U3-G1	74
	2 IL	3776	80	B0-U3-G1	
	3	4195	83	B1-U3-G1	
	3 IL	4305	86	B0-U3-G1	
	3W	5035	74	B1-U3-G1	
	4T	5072	79	B1-U3-G1	
	4	5107	80	B2-U3-G2	
	FTA	5067	80	B1-U3-G2	
	FTA IL	4554	77	B0-U3-G1	
12L	2	4509	73	B1-U3-G2	103
	2 IL	4735	66	B0-U3-G1	
	3	7860	76	B1-U3-G2	
	3 IL	5503	74	B0-U3-G1	
	3W	7973	68	B1-U3-G2	
	4T	7572	73	B2-U3-G2	
	4	7709	75	B3-U3-G2	
	FTA	7709	75	B2-U3-G2	
	FTA IL	6987	67	B0-U3-G1	

*LED Chips are frequently updated therefore values are nominal

LUMINAIRE EPA CHART - SLM

Tilt Degree	0°	10°	20°	30°	Tilt Degree	0°	10°	20°
Single	0.5	2.1	2.6		180°	1.2	2.9	3.6
D180°	1.1	2.1	2.6		TW120°	1.3	4.4	5.4
D90°	0.9	2.5	3.1		000°	1.2	2.9	3.6

Specifications and dimensions subject to change without notice.

LSI Industries Inc. 10000 Alliance Rd. Cincinnati, OH 45242 - www.lsi-industries.com - (513) 372-3200 - ®LSI Industries Inc. All Rights Reserved.

08/1/19

SPECIFICATION FOR LIGHT FIXTURE 'A'

3



C-WP-A-TR-15L Series

LED High-Output Traditional Style Wall Pack
Up to 15,000 Lumens
Replaces 320W PSMH/400W MH

C-LITE
LED LIGHTING BY CREE

THE TRADITIONAL LOOK YOU WANT – NOW IN LED!

Efficient, robust and reliable, with industry leading Cree LEDs

PRODUCT SPECIFICATIONS

OVERVIEW

- Initial Delivered Lumens: 15,000, 15,300
- CRI: ≥ 70
- CCT: Neutral White (4000K)
- Input Power: 119 Watts
- Dimmable: No
- Operating Minimum: -40°C (-40°F)
- Lifespan: Estimated 100,000 Hours
- Power Factor: > 0.9
- Total Harmonic Distortion: < 20%
- Limited Warranty: 5 Years*
- Replaces 320W PSMH/400W MH

EFFICIENT	DURABLE	RECOMMENDED USE	INPUT VOLTAGE
• Unbelievable energy savings (uses 70% less than 400W MH) • High-output, high-efficiency LED arrays	• Heat & shock-resistant borosilicate glass lens • Heavy duty, die-cast aluminum housing	• Security • Pathways • Perimeter Lighting	• Universal (120V through 277V Operation)

ORDERING INFORMATION

Example: C-WP-A-TR-15L-40K-DB

C-WP-A	TR	15L	40K	DB
PRODUCT	TYPE	LUMEN PACKAGE	CCT	COLOR
C-WP-A	TR LED High-Output Traditional Style Wall Pack	15L 15,000 Lumens 119W	40K Neutral White (4000K)	DB Dark Bronze

CERTIFICATIONS:

US: www.c-lite.com T (800) 236-6800 F (252) 504-5415 Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507
Rev. Date: 01/25/2018 For informational purposes only. Content is subject to change. *See lighting.cree.com/warranty for details

SPECIFICATION FOR LIGHT FIXTURE 'B'

4

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
Detroit, MI · Rutherford, NJ · New York, NY
Princeton, NJ · Tampa, FL
www.stonefieldeng.com
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION

PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001770.83, 03001789, 03001790, 03001791, 03001792-3, 03003021.0031L, 03003022, 03003023, 03003024, & 03003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
627 EAST MILWAUKEE STREET
6600 BANTA AVENUE
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: M-19080

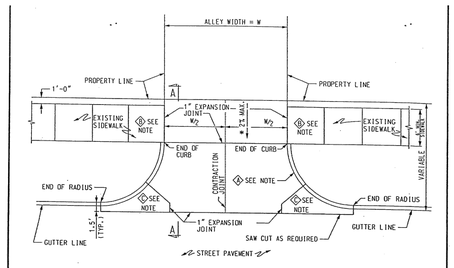
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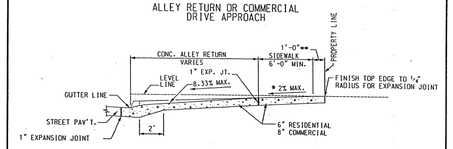
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C-10

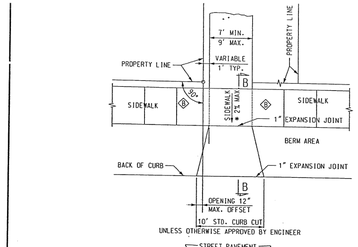
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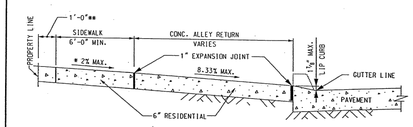
ALLEY RETURN OR COMMERCIAL DRIVE APPROACH



SECTION A-A



DETAIL OF CURB CUT OPENINGS FOR RESIDENTIAL DRIVEWAY



SECTION B-B

NOTES:

IF ALLEY IS PAVED, CONSTRUCT RETURN WITH 1" EXPANSION JOINT ON PROPERTY LINE.

Ⓐ RADIUS TO BE 10' UNLESS OTHERWISE SHOWN ON PAVING PLAN.

Ⓑ SIDEWALK FLAGS ABUTTING ALLEY SHALL BE 6" THICK. SIDEWALK SHALL BE REPLACED FOR A SMOOTH TRANSITION AND TO ATTAIN A CROSS SLOPE OF 2% MAX. OR AS DIRECTED BY THE ENGINEER.

Ⓒ KEY JOINT OR "B" JOINT IF REINFORCED PAVEMENT.

ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

* SIDEWALK CROSS SLOPE SHALL BE 2% MAX. OR AS DIRECTED BY THE ENGINEER.

** THE SLOPE OF THE DRIVEWAY IN THE 1 FT. SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

REVISION No.	DESCRIPTION	Drwn	Chkd	Appd	Date
C					
B	* SIDEWALK CROSS SLOPE	KSM	J.J.		3/1/05
A	Chgs. THICKNESS NOTE	KSM	N.N.	W.F.S.	7/30/06

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

K.S.M. DRAWN BY: | J.J. CHECKED BY:

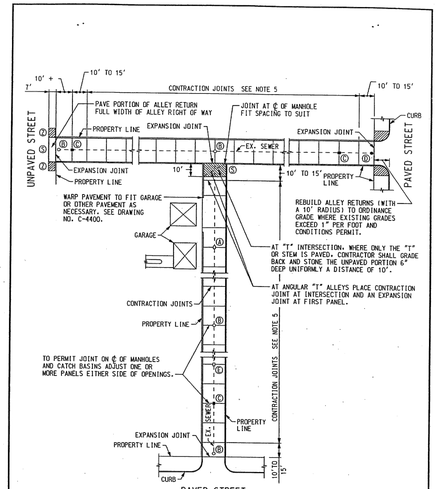
APPROVED: Sam Patrol, ENGINEER OF STREETS; Jeffrey Jacob, HEAD ENGINEER, CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION- D.P.W.
STANDARD PLAN FOR
DETAIL OF ALLEY RETURN AND DRIVE APPROACH

PLAN DATE	DRAWING NO.	DETAIL STANDARD NO.	SHEET
03/07/08	7	C-4384	1 OF 2

CITY OF DETROIT ALLEY RETURN AND DRIVE APPROACH DETAIL

NOT TO SCALE



PAVED STREET

TYPICAL PLAN

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

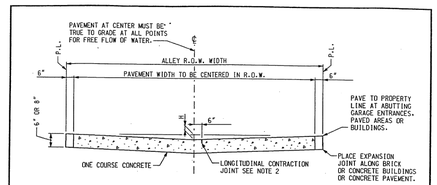
PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY: | W.F.S. CHECKED BY:

APPROVED: Dadun Harban, ENGINEER OF STREETS; HEAD ENGINEER; CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION- D.P.W.
STANDARD PLAN FOR
TYPICAL PLAN AND SECTION FOR CONCRETE ALLEY PAVEMENT

PLAN DATE	DRAWING NO.	DETAIL STANDARD NO.	SHEET
03/07/08	1	C-4396	1 OF 2



TYPICAL SECTION

ELEMENTS		
ALLEY WIDTH		H
PAV'T.	R.O.W.	
19'	20'	5"
17'	18'	4"
15'	16'	3"

NOTES:

1. PLACE EXPANSION JOINTS AT ALL STREET PROPERTY LINES AND ALLEY INTERSECTIONS.
2. LONGITUDINAL CONTRACTION JOINT TO BE CONSTRUCTED IN PAVEMENTS 17' AND OVER IN WIDTH UNLESS OTHERWISE NOTED ON PAVING PLAN.
3. MAXIMUM SPACING BETWEEN EXPANSION JOINTS SHOULD NOT EXCEED 600 FEET.
4. IF STREET IS ECONOMY PAVED THE AREA BETWEEN THE WALK AND EDGE OF PAVEMENT SHALL BE PAVED WITH 6" STONE BASE PLUS 2" OF COLD PATCH-MATERIAL. THE WALK FLAG SHALL BE 6" THICK
5. CONTRACTION JOINTS SHALL BE SPACED AT 15' C. TO C. FOR SLAG AGGREGATE AND 6.0 m C. TO C. FOR NATURAL AGGREGATE.

CONSTRUCTION SYMBOLS LEGEND

- ○ EXISTING SEWER MANHOLE
- ● PROPOSED SEWER MANHOLE
- □ EXISTING CATCH BASIN
- ■ PROPOSED CATCH BASIN
- Ⓐ ADJUST EXISTING CATCH BASIN
- Ⓑ ADJUST EXISTING MANHOLE
- Ⓒ CONSTRUCT CATCH BASIN
- Ⓓ CONSTRUCT MANHOLE
- Ⓔ ABANDON EXISTING CATCH BASIN
- Ⓢ STONING AND GRADING
- Ⓩ CONSTRUCT STANDARD 6" CONCRETE SIDEWALK

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION- D.P.W.
STANDARD PLAN FOR
TYPICAL PLAN AND SECTION FOR CONCRETE ALLEY PAVEMENT

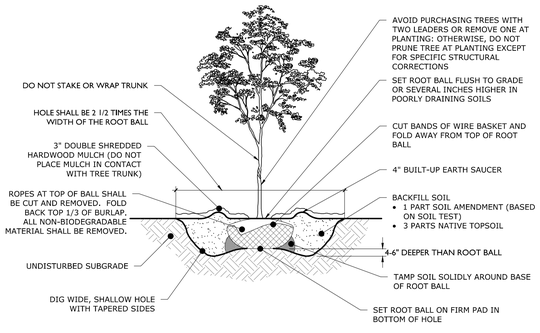
PLAN DATE	DRAWING NO.	DETAIL STANDARD NO.	SHEET
03/07/08	1	C-4396	2 OF 2

CIT OF DETROIT ALLEY DETAIL (C-4396)

NOT TO SCALE

NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL. THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
 - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
 - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX



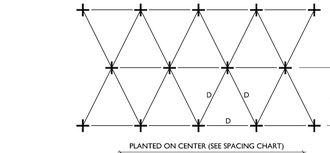
REFERENCES ARCHITECTURAL GRAPHIC STANDARDS COPYRIGHT 2000

DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

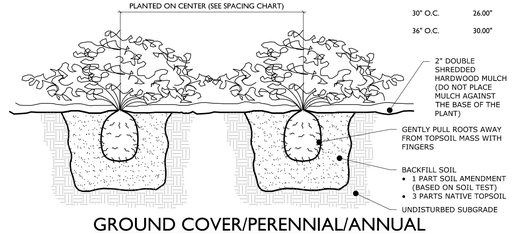
NOTES:

1. THOROUGHLY SOAK THE GROUND COVER ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
2. SOIL AMENDMENTS:
 - MODIFY HEAVY CLAY OR SILT SOILDS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
 - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX
3. ALL GROUND COVER AREAS SHALL BE TREATED WITH A PRE-EMERGENT PER MANUFACTURER'S SPECIFICATIONS



SPACING CHART
NOT TO SCALE

SPACING "D"	ROW "A"
6" O.C.	5.20"
8" O.C.	6.93"
10" O.C.	8.66"
12" O.C.	10.40"
15" O.C	13.00"
18" O.C.	15.60"
24" O.C.	20.80"
30" O.C.	26.00"
36" O.C.	30.00"

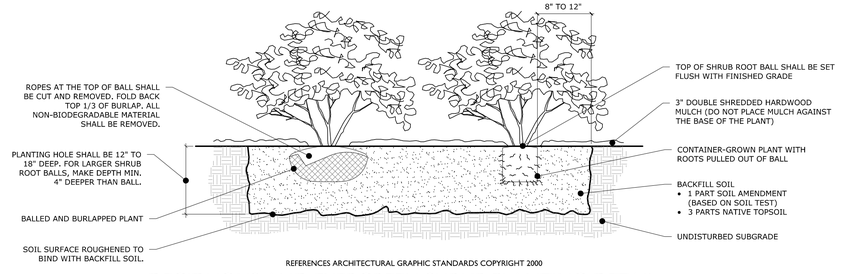


GROUND COVER/PERENNIAL/ANNUAL PLANTING DETAIL

NOT TO SCALE

NOTES:

1. FOR THE CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
 - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
 - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL



REFERENCES ARCHITECTURAL GRAPHIC STANDARDS COPYRIGHT 2000

DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

ISSUE	DATE	BY	DESCRIPTION
07	08/23/2019	MPH	REVISIONS PER COMMENTS
06	08/15/2019	MPH	REVISIONS PER COMMENTS
05	08/08/2019	MPH	REVISIONS PER COMMENTS
04	08/05/2019	MPH	REVISIONS PER COMMENTS
03	08/02/2019	ADG	REVISIONS PER COMMENTS
02	07/25/2019	ADG	FOR CLIENT REVIEW
01	06/11/2019	STJ	FOR CLIENT REVIEW

NOT APPROVED FOR CONSTRUCTION

STONEFIELD engineering & design
Detroit, MI · Rutherford, NJ · New York, NY
Princeton, NJ · Tampa, FL
www.stonefieldeng.com
607 Shelby Suite 200, Detroit, MI 48226
Phone 248.247.1115

SITE IMPROVEMENT PLANS

MILWAUKEE JUNCTION

PROPOSED MULTI-PURPOSE BUILDING

PARCEL IDS: 03001778.83, 03001780, 03001790, 03001791, 03001792-3, 03001021, 0031, 03003022, 03003023, 03003024, & 03003271
2857, 2863, 2871 & 2887 EAST GRAND BOULEVARD
6527, 6535, 6539 & 6545 OAKLAND STREET
626 EAST MILWAUKEE STREET
6401 & 6411 MILWAUKEE
CITY OF DETROIT
WAYNE COUNTY, MICHIGAN

MICHIGAN LICENSE No.6201065336
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: M-19080

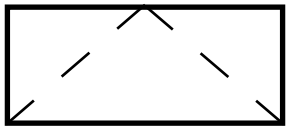
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DRAWING: C-11

V:\PROJ\M19-19080\METHOD DEVELOPMENT\2857 & 2863 EAST GRAND BOULEVARD, DETROIT, MI\CAD\PLOTS\P19-19080-11-12-DETL.DWG

REPLACEMENT WINDOWS (SEE DRAWINGS FOR PROJECT-SPECIFIC SIZE & LAYOUTS

QUAKER COMMERCIAL WINDOWS AND DOORS



Historical Series

H600 Series
AW-PG50
3 ¼" Frame Depth
Awning (Project-Out)

H600 SERIES AWNING (PROJECT-OUT)

The Quaker Historical H600 Series Awning window is ideal for a variety of applications including - Historical, Landmarks, Institutions, Education, Apartments and Assisted Living.

FEATURES

◊ Commercial Framing System
- 3 ¼" main frame
- Minimum of 0.090" wall thickness of interior and exterior walls, 0.078" wall thickness elsewhere

◊ Thermally Enhanced Design
- Azon pour and debridge thermal break is ½" wide in all main frame and vent rail extrusions

◊ Glazing
- 1" insulated glass

◊ Hardware
- Heavy-commercial Truth Contour™ locking system (Crank-out only)
- Low profile cam handle (Push-out only)
- Crank-out available (4-Bar hinges or butt hinges)
- Push-out available (4-Bar hinges)

◊ Screen
- Wicket screet (Push-out only)
- Standard screens (Crank-out only)

◊ Meets ADA Requirements (ADA Handle Required, Crank-out only)

OPTIONS

◊ Available Configurations
- Project-out awning
- Push-out or Crank-out
- Wire frame capabilities

◊ Muntin Choices
- Internal or simulated divided lites available

◊ Limited travel hardware

◊ Nailing Fin

◊ Glazing
- Capillary tubes
- Argon gas
- Wide variety of glazing, tinting and thickness options

◊ Panning & Trim Choices
- Wide variety of panning, receptor and trim available

◊ Mulling
- Wide variety of structural mulls

BENEFITS

◊ The capacity to match exterior colors for unique project facades
◊ The ability to facilitate large sizes for taller and wider window openings
◊ Historically accurate panning and trim styles to help your project meet Historic Preservation codes

PERFORMANCE

◊ Structural & Thermal (test reports or thermal simulations available upon request)

Model	Awning (Project-Out)
AAMA/WDMA/CSA 101/I.S.2/A440-08 Rating	AW-PG50
Structural Load P.S.F.	75.19
Air at 50 MPH (cfm/ft²)	0.10
Water (No Penetration) P.S.F.	10.03
U-Value (with Low-E and Argon)	0.36 - 0.40
SHGC (with Low-E and Argon)	0.14 - 0.31

Window test size: 60" × 36"

Operating Force: 6 lbf (maintain motion), 6 lbf (latches)
3 lbf (ADA Handle maintain motion), 3 lbf (ADA Handle latches)



Our products are tested to the standards of and certified by the American Architectural Manufacturer's Association, the National Fenestration Rating Council and the Window & Door Manufacturers Association.

AAMA NFRC WINDOW & DOOR MANUFACTURERS ASSOCIATION WDMA MEMBER

QUAKER COMMERCIAL WINDOWS AND DOORS

ARCHITECTURAL PAINT COATINGS AND FINISHES

◊ Baked on powder coat finish meets ANSA/AAMA 2604 specs and is available in unlimited colors

- 11 Popular Colors

White | Sandstone | Holly Green | Redwood | Chestnut | Satin Creme | Dark Bronze | Toffee | Beige | Earthone | Black

- 15 Impressive Colors

Agate Grey | Beige Grey | Burgundy | Gloss Black | Interstate Blue | Moss Green | New Bone White | New Dark Bronze

Patina Green | Polar White | Sky White II | Slate Gray | Teal | Telegrey 1 | Oyster White

- 7 Resemble Colors (painted finish resembling anodized)

Black Anodized | Champagne Anodized Light Range | Champagne Anodized Dark Range | Clear Anodized | Light Bronze Anodized | Dark Bronze Anodized Light Range | Dark Bronze Anodized Dark Range

- Unlimited Custom Colors

◊ ANSA/AAMA 2605 powder coat finishes

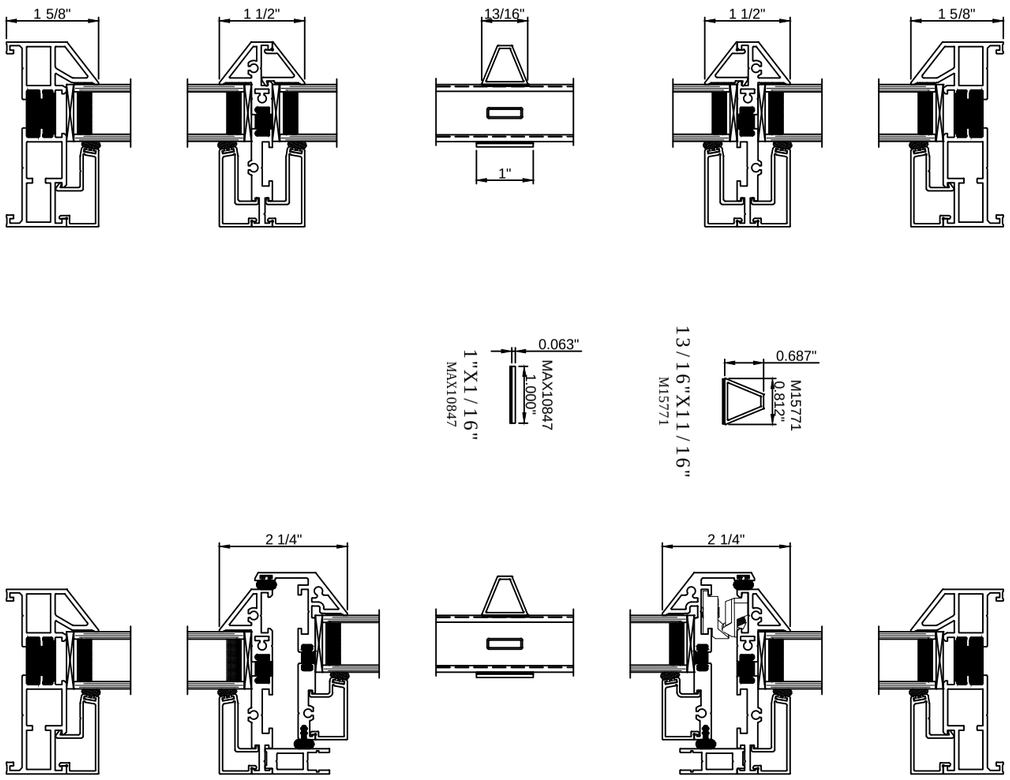
◊ AAMA 611-98 Class I clear and tinted anodized finishes

* Printed colors shown here may not accurately depict actual painted colors. Color samples are available upon request.

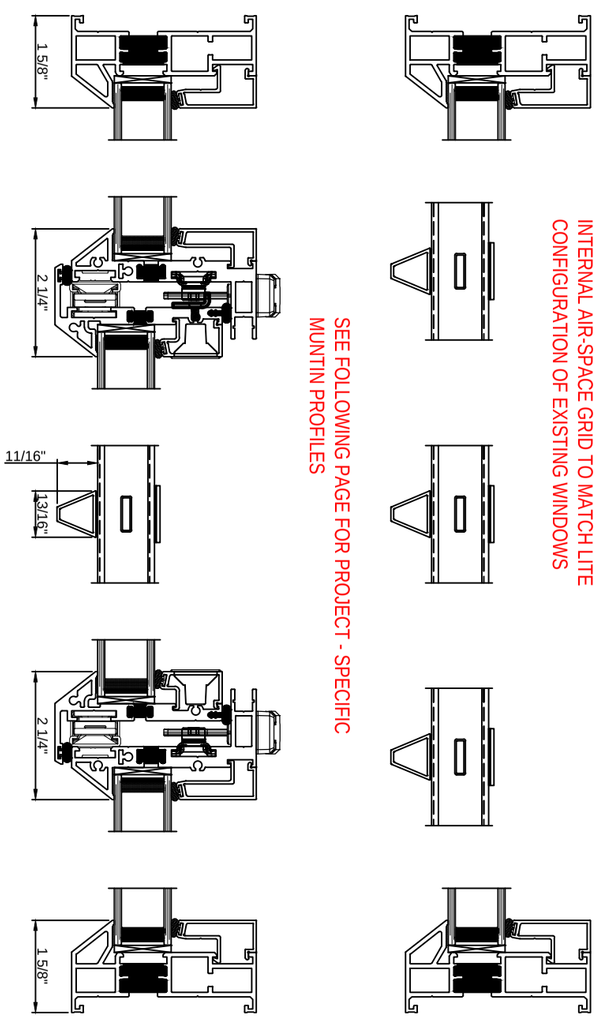
Our products are tested to the standards of and certified by the American Architectural Manufacturer's Association, the National Fenestration Rating Council and the Window & Door Manufacturers Association.

LAST UPDATED BY: DGRIMM 8/21/2019 10:14 AM

EXTERIOR



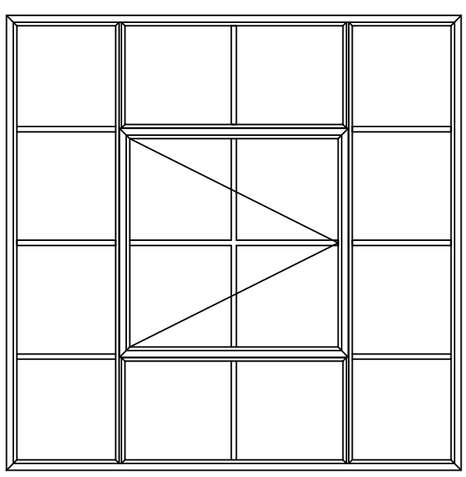
REPLACEMENT WINDOWS (SEE DRAWINGS FOR PROJECT-SPECIFIC LITE CONFIGURATION
THIS IS THE PROPOSED WINDOW AND MULLION PROFILE FOR THE NORTH ELEVATION ON E GRAND BLVD



SEE FOLLOWING PAGE FOR PROJECT - SPECIFIC MUNTIN PROFILES

WINDOWS ON SIDES AND REAR ELEVATIONS TO HAVE INTERNAL AIR-SPACE GRID TO MATCH LITE CONFIGURATION OF EXISTING WINDOWS

WINDOWS ON NORTH FACADE TO HAVE SIMULATED DIVIDED LITE GRILLE TO MATCH LITE CONFIGURATION OF EXISTING WINDOWS



NAILING FLANGES AND DRIP CAPS (INTEGRAL OR APPLIED) DO NOT TAKE THE PLACE OF WINDOW FLASHING. ALL WINDOWS AND DOORS MUST BE PROPERLY FLASHED AND SEALED WITH MATERIAL COMPATIBLE SEALANT FOR PROTECTION AGAINST WATER AND INFILTRATION AROUND THE ENTIRE PERIMETER. FAILURE TO DO SO COULD RESULT IN PRODUCT OR PROPERTY DAMAGE.

NOTICE:
QUAKER DOES NOT SUPPLY ANY FASTENERS, SHIMS, BACKER ROD, OR SEALANTS, UNLESS OTHERWISE NOTED

VERIFY INSTALLATION
VERIFY WALL DETAILS

SEALANT MUST MEET OR EXCEED ASTM C920-11 SPECIFICATION

PROVIDE ADEQUATE BLOCKING TO SUPPORT THE SILL OF THE WINDOW

PACK INSULATION AROUND WINDOW FRAME. DO NOT USE EXPANDING OR SPRAY-IN TYPE FOAMS.

QUAKER COMMERCIAL WINDOWS AND DOORS
PHONE (573)-744-5211
FAX (573)-744-5586
COMMERCIAL
FAX (573)-744-5822
aneuner@quakerwindows.com
504 Highway 63 South
Freeburg, MO 65035

Drawing Created: 8/21/19
Drawn By: DG
Checked By: ----
Scale: 3/8"=1"
Sheet #: C1

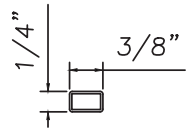
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QUAKER WINDOW PRODUCTS WILL NOT BE RESPONSIBLE FOR FIELD MEASUREMENT, QUANTITIES, & INSTALLATION DESIGN. CONTRACTOR MUST VERIFY ALL DIMENSIONS.

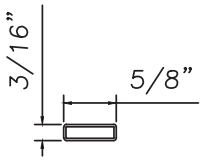
Project Name: H6002 FLOAT

ALUMINUM MUNTINS

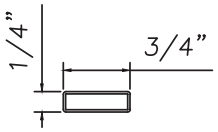
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BL230X5/16
Black only



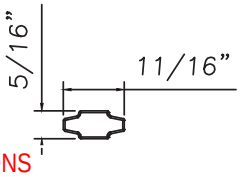
⅝” Internal (Alum.)
M3-16X5/8



¾” Internal (Alum.)
M36-04

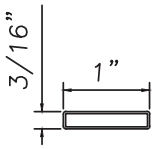


¾” Internal (Alum.) Contoured
M5.5X18

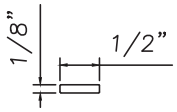


WINDOWS ON SIDES AND REAR ELEVATIONS TO HAVE INTERNAL AIR-SPACE GRID TO MATCH LITE CONFIGURATION OF EXISTING WINDOWS

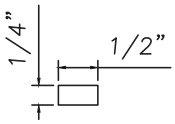
1” Internal (Alum.)
227688



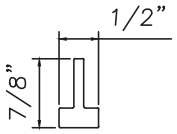
½” Flat Applied (Alum.)
M165



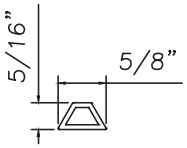
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MW21073



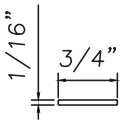
½” T Muntin
M3001



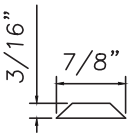
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M16154



¾” Flat Applied (Alum.)
MAY5950

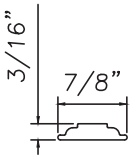


⅞” Raised Applied (Alum.)
M16861

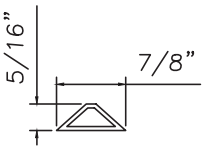


WINDOWS ON NORTH FACADE TO HAVE SIMULATED DIVIDED LITE GRILL TO MATCH LITE CONFIGURATION AND PROFILE DIMENSION OF EXISTING WINDOWS

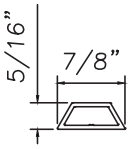
⅞” Raised Applied (Alum.)
CE-13993



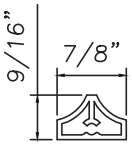
⅞” Raised Applied (Alum.)
M19895



⅞” Raised Applied (Alum.)
M538352



⅞” Raised Muntin
M1934



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Historical Project References

from

QUAKER
COMMERCIAL WINDOWS AND DOORS



Vinton Building
Detroit, MI
(read more about this project on page 21)

Preserving traditional architecture is complex.

You know it, and at Quaker Windows & Doors, we know it too. Yet at Quaker, it's nothing new to us. It has been a specialty of ours for years. In fact, we like to think we make this seemingly uneasy task an easy one.

That's why designers, developers and architects from across the country have turned to Quaker for our assistance with their historical projects. When it comes to being faithful to original window aesthetics, Quaker knows exactly what needs to be done and how to make it all work.

In this booklet, you'll see more than 140 examples of beautiful architecture from our history and read the stories behind them. In each case, Quaker has had the supreme honor of being a part in bringing these treasures back to life.

We encourage you to contact your Quaker sales representative or call us for more information on how Quaker can help you with your next historical renovation project.

Thank you for reading and for your interest in Quaker windows and doors.



Professional Building Lofts *(formerly The Professional Bldg.)*

Kansas City, MO — Built: 1929

Windows: Historical Single Hung — Credit: Federal

The Professional Building is one of the Kansas City's earliest examples of modernistic architecture. This 16-story, art-deco structure was erected during a time when Kansas City was going through a remarkable commercial growth period. Yet at the same time, "The City of Fountains" was falling behind other major U.S. cities when it came to healthcare. Designed by local architects Charles Smith and George McIntyre, The building was built to exclusively house healthcare professionals. It is now a mixed-use building with retail tenants and tech firms on the ground floor and lofts above.

QUAKER

1-800-347-0438

Projects listed in chronological order of when they were originally built.

Fannin Hall

Cave Spring, GA Built: 1846
Windows: Historical Single Hung Credit: Unknown

One of the first buildings erected for the Georgia School for the Deaf was Fannin Hall, named for O.P. Fannin, a teacher at the school. Along with being a classroom and learning facility, it also served as a dormitory and Civil War Hospital during its early years. Today, it is still called Fannin Hall but serves as Cave Spring's City Hall. The building is part of an entire district that was added to the National Register of Historic Places in 1980. The Greek-Revival building has been the recipient of several renovations over the years, the latest in 2015 when it was completely rehabbed from top to bottom, including new windows.


Fannin Hall

§ §

Poole & Hunt Foundry at Clipper Mill

Baltimore, MD Built: ca. 1855
Windows: Historical Casement, Double Hung & Picture Window Credit: Federal

Found near downtown Baltimore, Poole & Hunt Foundry opened in 1843. New buildings were added as part of an expansion more than a decade later. Once in these new buildings, Poole & Hunt quickly became one of the largest machine manufacturing shops in the U.S., best known for casting the 36-inch columns and brackets that still support the Capitol's dome in Washington DC, and for producing the cloth used for clipper ship sails during WWI. After a 1995 fire, the foundry was mostly vacant until a local developer acquired it and turned it into a mixed-use project.


Poole & Hunt Foundry at Clipper Mill

§ §

St. Paul Catholic Church aka St. Paul on Salt River Parish

Center, MO Built: 1860
Windows: Historical Picture Window Tax Credit: Unknown

St. Paul Catholic Church, with its picturesque gothic revival design, was added to the National Register of Historic Places in 1979. It was built by Fr. Francis Kielty and is thought to be Missouri's oldest Catholic church north of St. Louis. Although daily services and activities are no longer held there, it's still known as "The Mother Church of North Missouri" to this day.


St. Paul on Salt River Parish

§ §

Colt Gateway (*formerly Colt East Armory*)

Hartford, CT Built: ca. 1865
Windows: Historical Single Hung Credit: State

The original Colt Armory, located in an area known to Hartford locals as "Coltsville", burned to the ground in 1864. The widow of Colt firearm inventor and industrialist Samuel Colt, ordered a new 5-story armory to be built in the exact same place. Once done, it was larger, more fireproof and more decorative with an Italian-Renaissance look. In addition, the new Colt Armory carried over the most dramatic feature of the original; the blue onion dome with gold stars, topped by a gold orb which is the undisputed Colt symbol. Colt Manufacturing occupied the building until 1994 when it consolidated operations with their West Hartford locale. A different gun manufacturer, U.S. Fire Arms Mfg., moved in at that time and stayed until 2011. Today, the armory has been transformed into something completely different; a live-work community called Colt Gateway which contains residential and commercial lofts. Meanwhile a fiberglass dome, replicating the original, proudly sets atop the armory.


Colt Gateway

§ §

The Pointe

Louisville, KY Built: ca. 1867
Windows: Historical Single Hung & Picture Window Credit: Unknown

This structure is found in one of Louisville's oldest districts, Butchertown, an area that was put on the National Register of Historic Places in 1976. Butchertown dates to the 1820s, when numerous butchers and stockyards relocated there after being banned from downtown Louisville for sanitation reasons. The area thrived for more than a century, that is until the great Ohio River flood of 1937. When flood waters receded, only a handful of buildings had survived, including this large 1-story industrial warehouse that was once inhabited by leather goods and cotton manufacturers. It's now home to The Pointe, a Historically Certified Redevelopment Project, that is a popular event center and houses an array of businesses.


The Pointe

§ §


JACK Entertainment

JACK Entertainment *(formerly St. Marys School)*

Detroit, MI Built: 1868

Windows: Historical Arch Head Single Hung Credit: Unknown

After sitting empty for 10 years, the old St. Mary's School in Detroit's Greektown neighborhood, was reinvented as the headquarters for JACK Entertainment, owners of a casino in downtown Detroit. The 5-story structure, built shortly after the Civil War's end, served not only as a school, but also as an orphanage. It was also a residence for Catholic sisters. In 1966 the school closed, and it became St. Mary's Community Center. The structure has since been recognized as an official historic site by the state of Michigan.

§ §


Iron Building

Oxford Mills *(formerly Quaker City Dye Works)*

Philadelphia, PA Built: 1873--1913

Windows: Historical Single Hung & Picture Window Credit: Unknown

The former headquarters of the Quaker City Dye Works is made up of 2 masonry structures in Philadelphia's South Kensington neighborhood. The company manufactured dye, yarns and silk, and employed 200 workers at its peak. Starting in the 1970s, the complex housed Pieri Lamp Factory. However, in the years that followed, the lamp industry began migrating overseas and business dwindled. By the time developers scouted the property in 2011, Pieri had only one employee left. The structures have now been redeveloped as apartments for teachers and offices for non-profit organizations related to education.

§ §

Iron Building *(formerly Colonial Trust Company)*

Pittsburgh, PA Built: 1875-1881

Windows: Historical Single Hung & Arch Head Single Hung Credit: Unknown

Settled amid the Steel City's Central Business District are 3 adjoining office buildings known to Pittsburghers as "The Three Sisters". These 4-story structures have been home to many small businesses over the years and are best known for their stunning cast iron facade and Grecian/Italianate exterior. All three buildings were rehabbed in 2013 including the intricate details of the building fronts and the tall arched windows.

§ §


Stove Factory Lofts

Stove Factory Lofts *(formerly Great Western Stove Co.)*

Leavenworth, KS Built: ca. 1880

Windows: Historical Triple Hung Credit: State & Federal

In the late 1800s, Leavenworth was the most important manufacturing city in Kansas. Surprisingly, it was also one of the largest and busiest manufacturing cities in the entire United States, thanks in part to the stove industry. Great Western Stove Company, which made several types of coal, wood and gas heating and cooking stoves, operated out of 6 large buildings in downtown Leavenworth. Great Western Stove ran until the 1940s before closing. Later, the main building became home to a large tire distributor. Developers bought the complex in 2005 with the intent of turning it into residential and commercial leasing spaces. Despite several setbacks over an 8-year period, the owners stuck with their game plan and the first phase of Stove Factory Lofts came to fruition in 2015. To meet the required specifications, Quaker designed and manufactured a special triple hung window. Full completion of the project came in 2016.

§ §


The Beekman

Breezeway Apartments & Garrison Pointe West

Ft. Smith, AR Built: ca. 1880

Windows: Historical Single Hung (also Quaker Sliding Patio Door) Credit: Unknown

On the western edge of Ft. Smith, lies what is now known as Breezeway Apartments and Garrison Pointe West. These establishments are set inside two separate structures built about the same time. Developers refurbished both to form apartments and street-level business space. Part of the construction included the addition of an iconic Ft. Smith photo which shows a 1908 reunion of U.S. Marshall deputies in panoromic form.

§ §

Beekman Residences *(formerly Temple Court)*

New York, NY Built: 1881-1883

Windows: Historical Single Hung Credit: Unknown

When built, 10-story Temple Court qualified as a skyscraper according to NYC guidelines. It was a busy office building from the get-go, with major tenants such as the NRA occupying space. As time passed, Temple Court really hits its stride, becoming home base for more than 200 white collar businesses such as accountants, lawyers, publishers and

press agents. It remained an office building into the 21st century, though its significance severely waned. The last tenant left in 2001. After sitting empty for a dozen years, the terra cotta & brick building got a 2nd life as developers turned it into a luxury hotel and apartments.

§ §

Station Plaza *(formerly Liggett-Myers Tobacco Drying House)*

St. Louis, MO — Built: 1882
Windows: Historical Picture Window — Credit: State & Federal

Liggett & Myers Tobacco built this 6-level building as a warehouse to dry chewing tobacco. The city's 19th-century tobacco industry was so strong that by 1897, Liggett & Myers moved its headquarters from downtown to a larger complex on the edge of the city. However, the company kept their "drying house" for several more years. Ensuing owners used the building mostly for storage. The interior was made-over in the 1980s, then it sat vacant for some time. Developers purchased the building in 2014 and converted it into low-income apartments.


Station Plaza

§ §

Brewhouse Inn & Suites *(formerly Pabst Brewery)*

Milwaukee, WI — Built: 1882-1891
Windows: Historical Casement — Credit: Federal

Founded in 1844, Pabst was the largest brewery in America at one time. They produced millions of barrels of Pabst Blue Ribbon beer and other brands at this facility before abruptly closing it in 1996. The 26-building complex sat vacant for 10 years before a local investor/philanthropist turned several of the buildings into residential, office and retail space. A 2nd developer entered the picture in 2011 and purchased two of the buildings - the brewery and adjacent mill house - both of which are on the National Register. Those structures were rehabbed and re-opened in 2013 as an extended stay boutique hotel, restaurant & pub. The project was LEED-certified and boasts that many of the original features were maintained, including the iconic brew kettles and a huge stained-glass window featuring King Gambrinus, the unofficial patron saint of beer.



Brewhouse Inn & Suites

§ §

Morganton City Hall *(formerly Premier Hosiery)*

Morganton, NC — Built: 1882
Windows: Historical Awning — Credit: State & Federal

This 3-story structure originally housed Morganton Manufacturing & Trading, producers of wood doors, windows and moldings. In 1917, Garrou Knitting Mills refurbished the mill and began a long history of textile production. Additions were made in 1929 and again in 1939 to accommodate a new business, Morganton Full Fashion Hosiery Mill. Those firms merged in 1960 to form Premier Hosiery which was in business until 1995. Soon thereafter, the City Redevelopment Commission of Morganton purchased the mill, returned it to the original appearance and also got it added to the National Register. Morganton City Hall, along with another business, are now the occupants.


Cornerstone Apartments

§ §

Cornerstone Apartments *(formerly Kilpatrick-Koch Dry Goods)*

Omaha, NE — Built: ca. 1885
Windows: Historical Single Hung — Credit: Unknown

Amid the Old Market District in downtown Omaha sets this 5-story building. In 1887, Thomas Kilpatrick & Allen Koch purchased the building for their dry goods business. Two years later, in need of space, they tore down a partition wall and joined their store with the building next door. Kilpatrick-Koch Dry Goods remained open until 1969. Several decades later, renovations to the building turned it into an apartment/retail complex.

§ §

Moon Brothers Carriage Lofts *(formerly Moon Carriage Co.)*

St. Louis, MO — Built: 1885
Windows: Historical Single Hung — Credit: Unknown

Soon after they began manufacturing animal-drawn carriages, buggies and wagons, Moon Brothers Carriage built this 5-story Classical Revival structure for their offices and production facilities. As their reputation grew, so did business, forcing them to expand the building in 1894. By 1902 Moon Brothers had already outgrown this building and they moved on to an even larger facility. In ensuing years, a chemical company, a realtor and a division of Decca Recording Studios were located there. Developers recently renovated this National Register member into apartments/lofts.

§ §


Moon Brothers Carriage Lofts



NMS, Inc. *(formerly Old Village Hall)*

Mentor, OH Built: 1888
Windows: Historical Picture Window Credit: State & Federal

For more than 8 decades, this structure served as the government offices for the city of Mentor, located near Cleveland on Lake Erie. After the city offices moved in 1976, a local realty company bought the building. Several unsuccessful attempts to upgrade it followed. Finally, in 2013, a local business received a grant to refurbish this local landmark into office spaces. Early in 2017, work was completed. The replication was so well done that the contractor received a regional award for best historical renovation project.

§ §



Merchandise Mart Lofts *(formerly Liggett & Myers/Rice-Stix Bldg.)*

St. Louis, MO Built: 1889
Windows: Historical Double Hung Credit: State

The Liggett & Myers/Rice-Stix Building, a.k.a. "The Mart", was named after 2 entities; its original owner, Liggett & Myers Tobacco, and its original occupant, Rice-Stix Wholesale Dry Goods. The building was central to the city's dry goods and clothing industry for more than 100 years. St. Louis designated it as a landmark in 1979 and it has been on the National Register since 1984. Now renovated, it contains both lofts and retail spaces.

§ §

Roberts Lofts on the Plaza *(formerly Board of Education Bldg.)*

St. Louis, MO Built: 1891
Windows: Historical Single Hung Tax Credit: State & Federal

The 7-story St. Louis Board of Education Building was built to serve as the city's Public Library and house the St. Louis School Board. Although the Public Library moved on shortly after the turn of the century, the School Board kept its offices there until 2000. A few years later, two developers, both of whom were former students of the public school system, purchased the building and renovated it into residential lofts and retail spaces, renaming it Roberts Lofts on the Plaza. All the while, they were careful not to disturb the Romanesque Revival design of the building. In 2005, it was added to the National Register of Historic Places.

§ §



TelCo Lofts *(formerly NY/NJ Telephone Company)*

Jersey City, NJ Built: ca: 1891
Windows: Historical Single Hung Credit: State & Federal

Thought to be built sometime during the early 1890s, this 3-story building was originally the first New York/New Jersey Telephone Company Switching Station in the state of New Jersey. It later housed the Jersey City Police Department. Developers recently renovated the structure into loft-style apartments, naming it TelCo Lofts in deference to its original use by the telephone company.

§ §



Falstaff Buildings *(formerly Falstaff Breweries)*

St. Louis, MO Built: 1891-1902
Windows: Historical Double Hung Credit: State

This former brewery is part of an entire block found on the National Register. Falstaff Breweries originated in St. Louis in the mid-1800s, and beer was brewed there until 1977 when a corporate merger closed this facility and operations were consolidated with other U.S. plants. The 5 buildings on this site sat vacant until around 2000. They are now renovated for office space, light industrial production and warehousing.

§ §

Gaar Scott Historic Lofts *(formerly S.G. Cooke Co. Warehouse)*

Minneapolis, MN Built: 1892
Windows: Historical Single Hung & Picture Window Credit: Unknown

Along Minneapolis' riverfront sets this 6-story Richardsonian Romanesque structure. Built as a warehouse for S.G. Cooke Company, it suffered major damage during a severe fire in the 1980s. New owners purchased it in 1990 and refurbished it years later, naming it after a farm implement dealer who once did business there. Their work received Adaptive Reuse awards from the Minneapolis Historic Preservation Commission and the local AIA Chapter. Part of the city's Historic Warehouse District, the building now contains apartment lofts.

§ §

Cupples Station - Buildings #1 & #8

St. Louis, MO Built: 1894-1900

Windows: Historical Single Hung Credit: State

For decades, thousands of freight trains and armies of cargo handlers bustled amid a complex of multi-story warehouses in downtown St. Louis known as The Cupples District. With just a couple exceptions, the 20 Cupples buildings were 5 to 7 stories tall and conveniently connected by an underground network of tunnels which linked them to the riverfront. As rail traffic gave way to over-the-road and air delivery during the latter half of the 20th century, the signifance of the Cupples District withered. Several buildings were eventually lost to fire or torn down to make way for Interstate 40. Today, only 8 remain standing, including:

Cupples Station #1 is also known as The Hammermill. With arched brick doorways and 13-foot-high arched windows, this beauty was built at the turn of the century. Although designated as a City Landmark and found on the National Register, Cupples #1 was vacant for nearly 20 years until being renovated into lofts and commercial spaces.

Cupples Station #8 is a 6-story structure, originally known as Terminal Warehouse #1. It was designed by the same architectural firm as Cupples #1 so there are prominent resemblances. Cupples #8 is now known as Cupples Station Apartments and it too is a residential/commercial building.


Cupples Building #1

§ §

Majestic Stove Lofts *(formerly Majestic Stove Mfg. Co.)*

St. Louis, MO Built: 1895-1913

Windows: Historical Awning, Single Hung & Picture Window Credit: Unknown

The Majestic Stove complex, found on the National Historic Register, contains two 5-story brick buildings connected across an alley by an overhead "bridge" to form a hyphenated layout. Majestic Stove, famous for its line of commercial and residential cooking stoves, used this locale as their world headquarters until being sold in 1948. Decades later, a project to turn the buildings into lofts/apartments began. During the rehab, an odd yet curious discovery was made. An anonymous historian, believed to be a Majestic Stove employee, had recorded many significant and trivial events in chalk on the bricks dating as far back as the late 1920s. Events ranged from political news ***(FDR elected for 4th term 11/7/44)*** to national headlines ***(War Japan 12-8-41 and War Germany 12-11-41)*** to local weather ***(Hottest day 1936 July 109.2)*** to sports ***(Dean to Cubs 4/16/38)*** to company affairs ***(strike 3-8-37 and back work 5/17/37)***. During renovations, a few of the workers carried on the tradition by adding their own events and dates. While the identity of the original author was never discovered, the wall and its contents were preserved.


Majestic Stove Lofts

§ §

Boury Lofts *(formerly Boury Warehouse)*

Wheeling, WV Built: ca. 1895

Windows: Historic Arched Trapezoid Single Hung Credit: State

In its heyday, the 5-sided Boury Warehouse was the centerpiece of Wheeling's business district. It was home to several food-related businesses, including a biscuit manufacturer, a grocer, a coffee roasting company and others. Eventually it just became a storage facility before ending up vacant. In 2015, a local development group saw potential in the 6-story building and refurbished it into apartments and more. Completed in 2017, the refurbishment included spot-on replicas of the original arched trapezoidal windows. The entire body of work, including the infamous Boury water tower, received two prestigious awards. An NAHB best adaptive reuse award and the Preservation Alliance of West Virginia's award for best use of historic tax credits.



Boury Lofts

§ §

Eno River Mill *(formerly Eno Cotton Mill)*

Hillsborough, NC Built: 1896-1897

Windows: Historical Single Hung Credit: Unknown

The Eno Cotton Mill was built along and named after the Eno River. While always successful, the mill's products changed over the years. From ginghams and plaid in the early 1900s, to denims after WW I, to shirting and corduroy during The Great Depression, to army cloth during WW II. The mill was renovated and expanded in the mid-50s but gradually saw customer demand wane and it eventually closed in 1984. Four years later, a local family acquired the property and operated it as The Hillsborough Business Center. Around 1995, it was renamed Eno River Mill and given a facelift to attract more tenants. It's now home to several specialty manufacturers and distributors as well as a public charter school known as Expedition School.


Eno River Mill

§ §



Commerce Building Lofts *(formerly The Ilgenfritz Bldg.)*

Sedalia, MO Built: 1896-1897
Windows: Historical Single Hung Credit: State & Federal

The Ilgenfritz Building sits in the heart of Sedalia's commercial district and over the years was home to various retail tenants (JC Penney's for one), as well as professional offices. The building has remarkable moxie, having survived two fires, two modernizations and one large expansion in its lifetime. Through it all, it has kept many of its unique elements both inside and outside. In 2012, it was refurbished into loft apartments. The next year, it won the Missouri Preservation Society's award for best renovation project.

§ §



St. Louis Public Schools

St. Louis, MO Built: 1897-1915
Windows: Historical Awning & Single Hung Credit: Unknown

William Ittner, who as a boy attended public school in St. Louis inside dark, dreary buildings, got a chance to alter that learning environment when he became School Building Commissioner for the St. Louis Board of Education in 1897. Once in his new position, Ittner applied his experience and knowledge to completely revolutionize school designs. Over an 18-year period, Ittner designed 48 schools in St. Louis. Eventually, his reputation as the preeminent designer of school structures took him across the country. At the time of his death in 1936, he was credited with designing over 430 schools nationwide. Between 2009-2010, 20 public schools scattered throughout St. Louis were part of a huge window replacement project - several designed by Ittner. The oldest being Monroe School which was built in 1898. The youngest being Mullanphy School, which was erected in 1915.

§ §



The Meridian *(formerly A.D. Brown Building)*

St. Louis, MO Built: 1898
Windows: Historical Single Hung Credit: State

When built, the A.D. Brown Building was an important part of St. Louis' central business district. Because it was one of several places built in accordance to a "City Beautiful Plan", architects specified soot-resistant, lustrous enameled bricks for exterior walls, mirroring Chicago´s "White City" ideal design. Construction took only 8 months and immediately provided a regal home for Hamilton-Brown shoe manufacturers. Upon moving in, the company enjoyed unparalleled success. Within a decade, they were the largest shoe company in the world in terms of manufacturing and sales. In 1980, the structure was placed on the National Register. It has now been renovated into condos and apartments.

§ §



Mary Leila Lofts *(formerly Mary Leila Cotton Mill)*

Greensboro, GA Built: 1899
Windows: Historical Single Hung & Picture Window Credit: Unknown

William Jackson and Edward Copelan founded Mary-Leila Cotton Mill, naming it after their wives, Mary and Leila respectively. The mill was a huge spur to Greensboro's economy as it was the city's first source of industrial jobs. For more than a century, the mill produced cotton sheets and cordage material. During WW II, the mill was used to produce sheeting for the war effort. In 1987, Mary-Leila Cotton Mill and the surrounding village of worker houses were nominated to the National Register. The mill closed in 2005 and this landmark structure sat vacant until 2016, when it was renovated into lofts. New owners not only preserved the historic integrity of the old mill, they also remediated specific environmental conditions in accordance to Georgia's Environmental Protection Division (EPD). Green properties like energy-efficient windows were incorporated as well in hopes that the project would receive coveted LEED certification.

§ §



Tapestry on the Hudson *(formerly The Mooradian Bldg.)*

Troy, NY Built: 1899
Windows: Historical Single Hung Credit: State & Federal

Troy, NY earned the nickname "Collar City" because the shirt collar and cuff industry was a mainstay of the city's industrial footprint for 40 years between 1880-1920. So, it should be no surprise that one of the oldest buildings in Troy was originally home to Wilbur, Campbell & Stephens Co., a manufacturer of cuffs and collars. More recent generations know this 7-story, Romanesque-revival-style factory as Mooradian Furniture, who called it home from 1972-2006. When Mooradian's left, the building sat empty for 8 years until a non-profit development group stepped in to turn it into affordable and mixed-income housing.

§ §

Bolivar Building *(formerly Ohio Bell Telephone Co.)*

Cleveland, OH Built: ca. 1900

Windows: Historical Casement Credit: Unknown

This 4-story structure is next door to the Cleveland Grays Armory. It's in the Huron Historic District, an area that blossomed between 1890-1930 as Cleveland became one of the major transportation and industrial hubs in the United States. The Bolivar Building was at one time a main terminal for Ohio Bell Telephone. Refurbishments changed this one-time warehouse into multiple office spaces.

§ §

Revolution Mill

Greensboro, NC Built: 1900-1915

Windows: Historical Arch Head Single Hung Credit: Unknown

As the U.S. textile industry began to mushroom in the late 19th century, this was one of several mills built and operated by textile magnates, brothers Moses & Caesar Cone. This wasn't their first mill, but it definitely became one of their most successful. It had the distinction of being the first modern flannel mill in the South, thus it was thought to be a revelation in textile circles. Because of that, the original name proposed was "Revelation Mill" according to local historians. But that name was nixed because of Biblical associations. So, the Cones chose "Revolution Mill" instead. With a name finally in place, Revolution Mill burgeoned. By the 1930s, the mill had become the largest exclusive flannel producer in the world. It operated as Revolution Mill until 1982 before being sold to developers. In 1984, the entire complex was added to the National Registry. Meanwhile, it changed hands twice more over the next 30 years, before being purchased by the current owners, a community development organization. That group has refurbished Revolution Mill into a commercial complex with more than 50 businesses currently leasing space.

§ §

Battell Community Center *(Battell Elementary School)*

Mishawaka, IN Built: 1900-1920

Windows: Historical Single Hung & Picture Window Credit: Unknown

A year after the village of Mishawaka officially became a city, the Battell Elementary School was built. Two decades later, an additional portion was added to the building's west side. The original section of the school was converted into apartments owned and operated by the local Housing Authority while the 1920 expansion was used for various purposes. In 1982, the city purchased the western portion of the facility and turned it into a community center. In 2015-2016, renovations of the community center, including new windows, were made to make the structure much more inviting to local residents.

§ §

The Georgian *(formerly City Hospital)*

St. Louis, MO Built: 1900-1971

Windows: Historical Single Hung Credit: State

After an 1896 tornado damaged or wrecked St. Louis' City Hospital, a new hospital was developed on the same property. With various expansions, it would consist of 13 buildings by 1971. With the exception of three, all the buildings in the complex were either directly attached to one another or linked by above-ground corridors and bridges. With the exception of one, the buildings share the same brick color and a remarkably consistent ornamentation. The complex, a member of the National Register, sat fully abandoned after the hospital moved to a new locale in 1985. More than 15 years later, selective demolition began in anticipation of the complex's long-hoped-for renovation. Work halted for a long period afterwards but resumed in 2005 when a rehab plan was introduced by developers. The property is now known as The Georgian (after the Georgian Revival style architecture it sports), and has been redeveloped into residential, commercial and retail properties.

§ §

Rudman on the Park *(formerly The Rudman Building)*

St. Louis, MO Built: 1901

Windows: Historical Single Hung Credit: State & Federal

The 8-story Rudman Building was designed by nationally-renowned St. Louis architect Isaac S. Taylor. It was built to be corporate headquarters for Peter's Shoe Company. Later, International Shoe Company called the building home. It was added to the National Register in 1984. After 20 years of being unoccupied, developers purchased the building and shortly thereafter a complete renovation began. Now known as Rudman on the Park, it houses lofts as well as commercial and retail businesses.

§ §


Bolivar Building


Revolution Mill


The Georgian


Rudman on the Park



Installation & Service Technologies

(formerly Western Newspaper Union Bldg.)

Kansas City, MO Built: 1901

Windows: Historical Single Hung & Picture Window Credit: State & Federal

Constructed for the A. N. Kellogg Auxiliary Newspaper Co., this building housed their entire printing operations during its first 5 years. That's when Western Newspaper Union, owned by Midwest media mogul George Joslyn of Omaha, purchased the business and the building. This acquisition, plus subsequent mergers, made Western Newspaper Union the largest auxiliary newspaper company in the country. It wasn't until the 1950s that Western Newspaper Union began to see a drop off. Decades later, the building would actually be completely empty when it was bought and refurbished by a company that oversees nationwide rollouts of digital menu boards and other cutting-edge restaurant technology.

§ §



A.F Bornot Dye Works Lofts

(formerly A.F. Bornot French Steam Dyeing & Scouring)

Philadelphia, PA Built: 1901-1925

Windows: Historical Awning & Picture Window Credit: State & Federal

This multi-structure property takes up an entire block in central Philadelphia. The main building has 4 stories and is a well-known area icon with its curved corner. It was built as the corporate headquarters for A.F. Bornot French Steam Dyeing & Scouring. The man for whom the building is named, A.F. Bornot, was a French immigrant who ran a very successful dry cleaning and dyeing business for many years. Adjacent 2-story buildings housed Security Elevator Company and an auto brake manufacturer respectively. Eventually occupancy ebbed and by 1997, all 3 were empty. They would stay that way for 15 years until new owners took over with a redevelopment plan in hand. After 4 years of construction and behind-the-scenes work, developers turned the 3 abandoned structures, plus a fourth building, into a mixed-use project, featuring lofts, single-family homes and retail tenants. Tall, arched windows, which are replicas to the originals, allow tenants beautiful views of the city. The property is listed on the Philadelphia Historic Register and is also part of an entire district that sits on the National Register.

§ §



Drayton Lofts *(formerly Drayton Mill)*

Spartanburg, SC Built: 1902-1960

Windows: Historical Single Hung (also Quaker Terrace Door) Credit: State & Federal

Drayton Mill was a big part of the thriving textile industry that served South Carolina during a major part of the 1900s. At its peak, 1,200 people were employed there. Over the years, it was expanded and altered, a common practice among textile mills as they adapted to changes and innovations in manufacturing technology. Additional buildings were added all the way up to 1960. The demise of Drayton Mill, and others just like it, began in the 1980s. Drayton Mill would officially shut down in 1995 and lay mostly vacant until 2007 when a local investor acquired it. In time, it was converted into luxury lofts. Meanwhile, Drayton Mill's historical clout was recognized with a National Register spot in 2012.

§ §



Capewell Lofts *(formerly Capewell Horse Nail Co.)*

Hartford, CT Built: 1903

Windows: Historical Single Hung & Picture Window Credit: State & Federal

This building was the 2nd home for the Capewell Horse Nail Company, as the original burned down in 1902. For years, Capewell horse nails were heavily sought around the globe. English Kings, Russian Czars and Japanese veterinarians were among Capewell's large customer base. Nail production came to an end in 1981 and the building, topped by a stately Romanesque Revival tower, sat unoccupied for 30 years. In 2014, developers purchased the Capewell building and turned it into LEED-Gold certified loft apartments.

§ §



Washington Apartments *(formerly George Washington Hotel)*

St. Louis, MO Built: 1903

Windows: Historical Single Hung Credit: Federal

The 7-story George Washington Hotel was built in preparation for the 1904 World's Fair in St. Louis. President Theodore Roosevelt was a visitor to the fair and stayed at the hotel. In 1979 the building was renovated and converted into low-income housing. Almost 30 years later, in 2007, a similar yet more detailed restoration plan was implemented. Today, it contains low-income and senior apartments.

§ §

The Lofts at NoDa Mills *(formerly Mecklenburg Mill)*

Charlotte, NC Built: 1903-1905

Windows: Historical Single Hung & Arched Trapezoid Credit: Unknown

A restoration project that was in the works for many years was finally completed in 2015 when Mecklenburg Mill became The Lofts at NoDa Mills. NoDa is the name of the area where the development is located (short for North Davidson - a nearby road). This mill was built during the nation's textile boom. Unfortunately, the original owners were never profitable and sold it in 1926. It would be sold 3 more times before shutting down in 1969. By and large, the structure remained remarkably unchanged during those 43 years. Afterwards, Mecklenburg Mill sat vacant for many years as it passed through the hands of several more owners. The final investor, a non-profit organization, took over in 2011 and made good on a promise to turn it into affordable housing.



The Lofts at Noda Mills

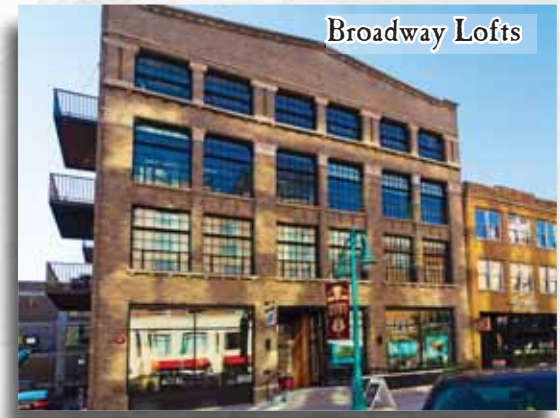
§ §

Broadway Lofts *(formerly G. Patek Warehouse)*

Milwaukee, WI Built: 1904

Windows: Historical Awning, Single Hung & Picture Window Credit: Federal

Prominent Milwaukee architect A.C. Eschweiler designed the G. Patek Warehouse. Columbia Knitting was the first tenant. Uses for this 4-story structure have included storage, manufacturing, and retail. The building, which is on the National Register, contains a Cream City Brick design and sits amid Milwaukee's historic Third Ward district. Renovations have turned it into apartments and retail spaces.


Broadway Lofts

§ §

The Chesterman *(formerly Brownhill & Kramer Hosiery Mill)*

Philadelphia, PA Built: 1905

Windows: Historical Picture Window with Floating Awning Credit: Unknown

Almost immediately after this building was erected, the Brownhill & Kramer Hosiery Mill moved in. The original building eventually grew to as many as 6 interconnected structures by 1926. In 1938, Brownhill & Kramer found itself lured outside of Philadelphia by the prospect of cheaper labor and closed the mill's doors. Following Brownhill & Kramer's departure, the complex was renamed The Chesterman Building, as it was occupied by the Chesterman-Leeland Company, manufacturers of stainless steel and aluminum products. Despite other inhabitants over the years, the Chesterman name stuck. The Chesterman, which sits in a unique area of Philadelphia called Fishtown, has recently been reinvented as a loft apartment building, with spectacular views of the city and the Delaware riverfront courtesy of its huge windows.

§ §

Bee Hat Lofts *(formerly Bee Hat Company)*

St. Louis, MO Built: 1905

Windows: Historical Single Hung Credit: State

Early in the 20th century, many multi-story warehouses and factories popped up in downtown St. Louis, including this 7-story building. It was distinguishable from the others because of detailed terra cotta ladies gracing the roofline and ornate terra cotta lion heads on the building's exterior just above the lst floor. Gauss Langenberg Hat Company is believed to have operated there for some time before Bee Hat Company came in 1944. It's where Bee Hat stayed until moving to a new St. Louis locale in 2000. This city landmark has since been developed into a mixed-use property. As for the unique lion heads, they've been kept intact and designed to allow steam to "roar" out of their mouths at various intervals, creating an impressive sight for pedestrians.


Bee Hat Lofts & Apartments

§ §

Sterling Park Apartments

(formerly Sears-Roebuck Nat'l Headquarters)

Chicago, IL Built: 1905-1907

Windows: Historical Single Hung & Picture Window Credit: Unknown

When the Chicago headquarters for Sears Roebuck & Co. was built, it contained 4 buildings, a park and its own power plant. Amazingly, a year after its opening, the campus was bustling with more than 9,200 employees. In the 1920s they would add their own athletic field and facilities. Eventually, the campus covered 41 acres. When Sears moved to the infamous Sears Tower in 1973, most of this facility was vacated. Eventually, some of the buildings on the campus were completely demolished. Others remained, including this structure which contained Sears-Roebuck's catalog printing facility and product test lab. After years of non-occupancy, a non-profit group tackled the job of refurbishing the campus, turning it into a mixed-income neighborhood with affordable housing apartments.


Sterling Park Apartments

§ §

THERMALLY BROKEN METAL WINDOW AND DOOR SYSTEMS

DYNAMIC® Architectural Windows & Doors



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STEEL-Arte®

- NARROW PROFILES IN BRONZE, ALUMINUM & STEEL
- THERMALLY BROKEN FOR OPTIMAL THERMAL PERFORMANCE
- ALL SYSTEMS INCORPORATE WELDED CONSTRUCTION
- OPTIONS FOR BOTH PATINA AND PAINTED FINISHES
- VARIOUS INTERIOR BEADING STOP/BEAUTY RING OPTIONS
- WINDOWS, HINGED & SLIDING DOOR OPTIONS



BEGA

Wall luminaire

EXL-1 & EXL-2 EXTERIOR WALL MTD.

33 581

10 IP 64

Project · Reference number

Date

Product data sheet



Application
LED wall luminaire with single sided light output.
Fully glare free light for lighting wall surfaces.
For interior or exterior lighting design.

Product description
Luminaire made of aluminium alloy, aluminium and stainless steel
Clear safety glass
Silicone gasket
Reflector made of pure anodised aluminium
2 mounting holes ø 4.5 mm
Distance apart 105 mm
2 cable entries for through-wiring of mains supply cable ø 7-10.5 mm, max. 5 G 1.5□
3-pole plug connection with connecting terminal and earth conductor terminal 2.5□
LED power supply unit
220-240 V ∿ 0/50-60 Hz
DC 176-280 V
DALI controllable
A basic isolation exists between power cable and control line
Safety class I
Protection class IP 64
Dust-tight and protection against splash water
Impact strength IK06
Protection against mechanical impacts < 1 joule
10 – Safety mark
CE – Conformity mark
Weight: 2.4 kg

Lamp

Module connected wattage	7.9 W
Luminaire connected wattage	10.3 W
Rated temperature	t_a = 25 °C
Ambient temperature	$t_{a\,max}$ = 40 °C

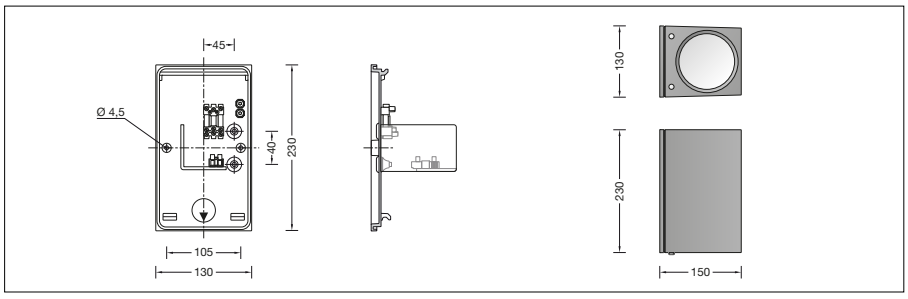
On request we can offer you modifications for enviroments with higher temperatures as a customized product.

33 581 K3

Module designation	LED-0683/830
Colour temperature	3000 K
Colour rendering index	CRI > 80
Module luminous flux	1125 lm
Luminaire luminous flux	743 lm
Luminaire luminous efficiency	72,1 lm / W

33 581 K4

Module designation	LED-0683/840
Colour temperature	4000 K
Colour rendering index	CRI > 80
Module luminous flux	1185 lm
Luminaire luminous flux	782 lm
Luminaire luminous efficiency	75,9 lm / W



Lifetime of the LED
Ambient temperature t_a = 25 °C
– at 400,000 h: L 70 B 50

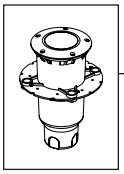
max. ambient temperature t_a = 40 °C
– at 370,000 h: L 70 B 50

Inrush current
Inrush current: 5 A / 50 µs
Maximum number of luminaires of this type per miniature circuit breaker:
B 10 A: 31 luminaires
B 16 A: 50 luminaires
C 10 A: 52 luminaires
C 16 A: 85 luminaires

Lighting technology
Half beam angle 20°
Luminaire data for the light planning program DIALux for outdoor lighting, street lighting and interior lighting as well as luminaire data in EULUMDAT and IES format are available on our website www.bega.com.

Article No. 33 581
LED colour temperature optionally 3000 K or 4000 K
3000 K – Article number + **K3**
4000 K – Article number + **K4**

Colour optionally graphite, white or silver
Graphite – Article number
White – Article number + **W**
Silver – Article number + **A**



Precision² | BIGGL SOLID STATE LIGHTING

Integral Driver

THE POWER OF X

EXL-3
IN-GROUND UP LIGHT

CO²

PROJECT:	
TYPE:	
CATALOG NUMBER:	
LAMP(S):	
NOTES:	

CATALOG NUMBER LOGIC

		CO2	LED	TR							MT										
Example	**S**	**-**	**CO2**	**-**	**LED**	**-**	**TR**	**-**	**x58**	**-**	**WFL**	**-**	**MAC**	**-**	**11/12**	**-**	**D12INC**	**-**	**MT**	**-**	**AH**

Material

Blank - Aluminum **B** - Brass **S** - Stainless Steel

Series

CO2 - Precision2® In-grade with Surface Mounted Faceplate

OptiLock®

LED - 'X' Technology with Chip on Board Construction

Housing

TR - Integral Housing

LED Type

x58 - 12WLED/2.7K
x59 - 12WLED/3K
x60 - 12WLED/4K
x61 - 20WLED/2.7K
x62 - 20WLED/3K
x63 - 20WLED/4K
x43 - 34WLED/2.7K **only available with NFL and WFL optics*
x44 - 34WLED/3K **only available with NFL and WFL optics*
x45 - 34WLED/4K **only available with NFL and WFL optics*

Optics

SP - Spot (15°) **For use with x58, x59, x60, x61, x62 and x63*
FL - Flood (35°) **For use with x58, x59, x60, x61, x62 and x63*
NFL - Narrow Flood (25°) **For use with x43, x44 and x45*
WFL - Wide Flood (60°)

Finish

Aluminum & Brass Faceplates

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Brass Faceplates

Machined	**MAC**
Polished	**POL**
Mitique™	**MIT**

Stainless Faceplates

Machined	**MAC**
Polished	**POL**
Brushed	**BRU** *Interior use only.*

Premium Finish

ABP	Antique Brass Powder	**CMG**	Cascade Mountain Granite	**RMG**	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	**CRI**	Cracked Ice	**SDS**	Sonoran Desert Sandstone
AQW	Antique White	**CRM**	Cream	**SMG**	Sierra Mountain Granite
BCM	Black Chrome	**HUG**	Hunter Green	**TXF**	Textured Forest
BGE	Beige	**MDS**	Mojave Desert Sandstone	**WCP**	Weathered Copper
BPP	Brown Patina Powder	**NBP**	Natural Brass Powder	**WIR**	Weathered Iron
CAP	Clear Anodized Powder	**OCP**	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Accessory *Select up to 2. Requires Accessory Holder.*

11 - Honeycomb Baffle
10 - Spread Lens
12 - Soft Focus Lens
13 - Rectilinear Lens

Driver Type *(Driver Wattage must match Fixture Wattage)*

D12INC - 12W Dimming Driver *(for use with Incandescent Dimmer. 120V only)*
D20INC - 20W Dimming Driver *(for use with Incandescent Dimmer. 120V only)*
D34INC - 34W Dimming Driver *(for use with Incandescent Dimmer. 120V only)*

Input Voltage

MT - 120-277 VAC Input

Option

AH - Accessory Holder *(Accommodates up to 2 Media)*
TC - Traction Control Lens *(Replaces Flat Glass)*

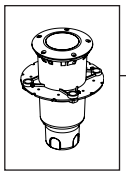
B-K LIGHTING

40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED 11-7-17

DRAWING NUMBER SUB-2406-00

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Precision²

BKSSL® SOLID STATE LIGHTING

Integral Driver

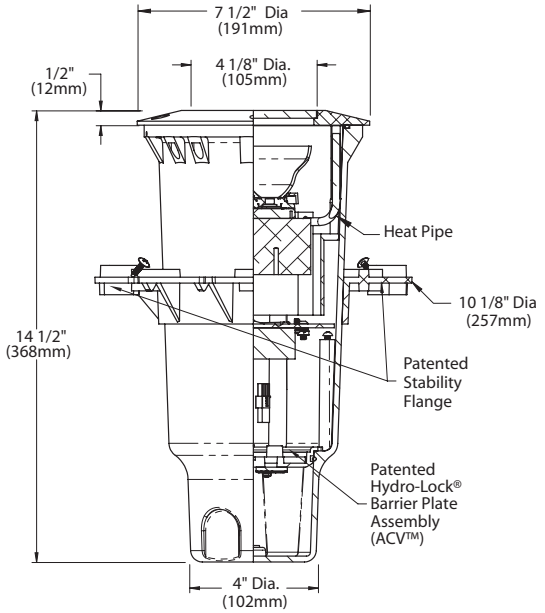
THE POWER OF

EXL-3
IN-GROUND UP LIGHT

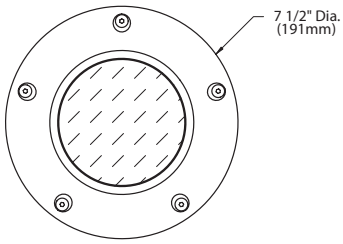
CO²

PROJECT:	
TYPE:	

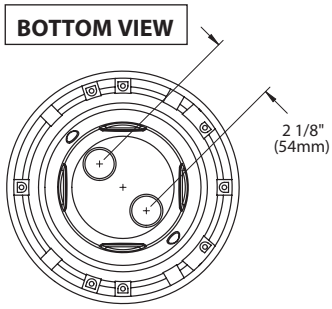
SIDE VIEW



FACEPLATE



BOTTOM VIEW



DRIVER ELECTRICAL DATA

TYPE	AC INPUT RANGE	FREQUENCY HZ	DIMMING	POWER FACTOR AT FULL LOAD	THD	OPERATING AMBIENT TEMPERATURE	DIMMER TYPE	DIMMER RANGE	IN RUSH CURRENT
D12INC	105-305	50/60	YES	≥0.94	≤5%	-30°C to 50°C (-22°F to 122°F)	Incandescent	10-100%	<250mA
D20INC	105-305	50/60	YES	≥0.94	≤5%	-30°C to 50°C (-22°F to 122°F)	Incandescent	10-100%	<250mA
D34INC	105-305	50/60	YES	≥0.94	≤5%	-30°C to 50°C (-22°F to 140°F)	Incandescent	10-100%	<250mA

All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Fixture Housing
Corrosion-free composite, made from high strength, thermo-formed, sheet molded polyester compound. Glass reinforced, flame retardant and UV stabilized. (2) bottom-entry, 3/4" NPT female conduit entries with knockout plugs and (4) side flats for 1/2" or 3/4" conduit adapters.

Patented Stability Flange
Corrosion-free composite flange projects into installation sub-strate to reinforce housing stability. Integral REBAR saddles simplify installation onto concrete form. (4) Orthogonal bosses permit use of 1/2" PCV conduit or EMT to simplify vertical position and leveling of housing. Pre-set self-tapping screws anchor housing at proper elevation.

Aiming
Dual axis heat sink system rotates 360° and provides vertical adjustment up to 15° from nadir. Positive lock action ensures optical orientation.

BKSSL®
Integrated solid state system with 'X' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance.

LM-80 certified. Minimum 50,000 hour rated life at 70% of initial lumens (L70). BKSSL® technology provides long life, significant energy reduction and exceptional thermal management.

Color Management
Corrected cold phosphor technology delivers near-perfect natural white light. Long term phosphor maintenance over product life. Exact color point conformity exceeds ANSI C78.377 standard. Provides uniform beam with no color variation over angle. Module exceeds 80 CRI (RA>80, R9>16).

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution.

Installation
For direct burial in soil or concrete. Consult Drainage Installation Guide for In-Grade Fixtures (DIG-IT) for compliance with proper soil preparation and drainage requirements prior to installation.

Driver Assembly
For use with [1] 700mA (D12INC and D20INC) / 1.05A (D34INC), Class A, constant current driver. 120-277VAC (nominal) primary input voltage. 50/60Hz. >0.94 Power Factor, <250mA in-rush current, 0.25A input current, ≤20%THD (nominal at 120VAC full load). Output over-voltage, over-current, and short circuit protection with auto recovery. EMC: FCC47CFR Part 15 Class B compliant. Dimming driver for use with standard incandescent dimmers. 10-100% range.

Dimming driver for use with standard incandescent dimmers. 10-100% range.

Heat Management
Patent pending heat sink system with Heat Pipe technology. Utilizes copper heat pipes that actively accelerate the heat transfer away from the LED with pure conduction to the exterior of the housing without compromising lumen output. Ensures longer extended lifetime performance of LED. Heat pipe technology adjustable 20W and 34W only. 12W not required.

Wiring / Connectors
Teflon® coated wire, 18 gauge, 600V, 250°C rated and certified to UL1659 standard. Features OptiLock® and gear tray quick disconnects. Patented HydroLock® with anti-siphon valve (ASV™) wireway. (3) Water-Tight connectors supplied for line connection. Maximum (2) #10 & (1) #18. Minimum (1) #12 & (1) #18.

Water Management
Self Evacuating Airtight Lamp Module (S.E.A.L.™). IP-68 rated, vacuum sealed enclosure. Patented Anti-Condensation Valve (ACV™) eliminates condensation from optical chamber. High temperature silicone 'O' Ring at faceplate. Patented HydroLock® technology provides fail safe water barrier between junction box and interior components. Anti-siphon valve (ASV™) prevents "wicking" through conductor insulation.

Lens
High heat, shock resistant, tempered 1/4" borosilicate flat glass lens. Suitable for walk-over and drive-over applications to 35,000 lbs.

Faceplate
Solid, 1/2" machined 6061T6 aluminum with (5) black oxide, captive, stainless steel mounting screws. Faceplate options include solid, 1/2" machined brass and solid, 1/2" machined stainless steel.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish. (Brushed finish for interior use only).

Listings
UL Listed. Certified to CAN/CSA/ANSI Standards. IP68 Rated.
Made in the USA.

c UL us LISTED RoHS MADE IN THE USA

®Teflon is a registered trademark of DuPont Corporation

B-K LIGHTING

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www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
11-7-17	SUB-2406-00

Precision2® and its features are covered in whole or in part by U.S. Patent Nos. 7,033,038; 6,254,258 B1; 7,249,867 B2; 7,370,988 B2; 7,553,042; 7,560,148; and 7,699,489

LAMP & DRIVER DATA

x58, x59, x60, x61, x62, x63, x64, x65, x66

DRIVER ELECTRICAL DATA

Type	AC Input Range	Frequency Hz	Power Factor At Full Load (Efficiency)	THD	InRush Current	Operating Current	Operation Ambient Temperature	Dimmer Type	Dimmer Range
D12INC	105-305Vac	50/60	> 0.94	≤5%	< 250mA	700mA	-30° C ~ 50°C	Incandescent	10-100%
D20INC	105-305Vac	50/60	> 0.94	≤5%	< 250mA	700mA	-30° C ~ 50°C	Incandescent	10-100%
D27INC	100-277Vac	50/60	> 0.90	≤20%	< 10A max @ 120Vac	700mA	-30° C ~ 50°C	Incandescent	10-100%

LM79 DATA

BK No.	CCT (Typ.)	CRI (Typ.)	Input Watts (Typ.)
x58	2700K	80	12W
	2700K	80	12W
	2700K	80	12W
x59	3000K	80	12W
	3000K	80	12W
	3000K	80	12W
x60	4000K	80	12W
	4000K	80	12W
	4000K	80	12W
x61	2700K	80	20W
	2700K	80	20W
	2700K	80	20W
x62	3000K	80	20W
	3000K	80	20W
	3000K	80	20W
x63	4000K	80	20W
	4000K	80	20W
	4000K	80	20W
x64	2700K	80	27W
	2700K	80	27W
	2700K	80	27W
x65	3000K	80	27W
	3000K	80	27W
	3000K	80	27W
x66	4000K	80	27W
	4000K	80	27W
	4000K	80	27W

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens (L_{70})
50,000
50,000
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50,000
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OPTICAL DATA

Angle	CBCP	Delivered Lumens
15°	3877	724
35°	1498	663
60°	629	625
15°	4059	758
35°	1568	694
60°	659	655
15°	4561	851
35°	1762	780
60°	740	736
15°	7098	1306
35°	2621	1124
60°	1048	1063
15°	7488	1378
35°	2765	1186
60°	1106	1121
15°	7800	1435
35°	2880	1235
60°	1152	1168
15°	15679	1769
35°	4656	1588
60°	1517	1386
15°	16190	1827
35°	4808	1640
60°	1567	1431
15°	17042	1923
35°	5061	1726
60°	1649	1506

OPTICS

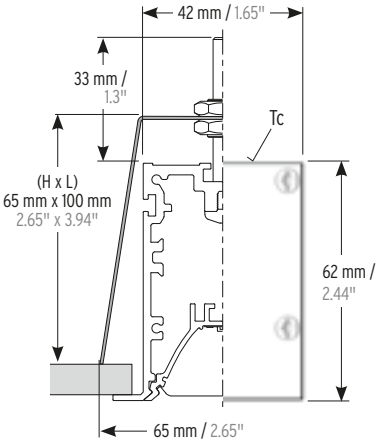
Optic	Angle
Spot	15°
Flood	35°
Wide Flood	60°

XOOLIGHT™ HYDRA White IP67



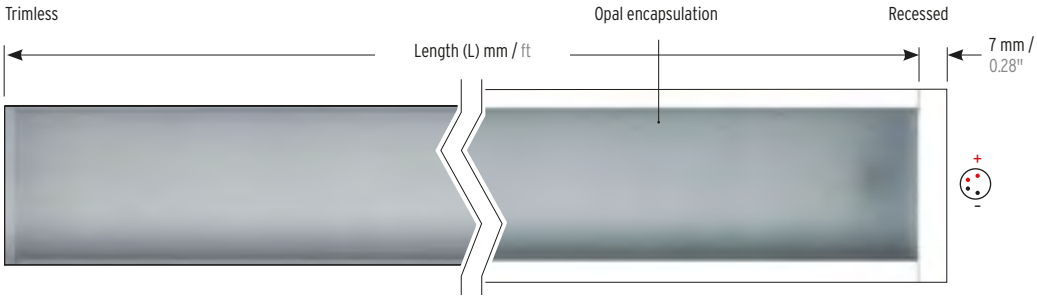
24 V linear LED luminaire in IP67 for general lighting. Full polyurethane encapsulation with an opal polyurethane top layer offering a premium water proof sealing (values), UV resistance (no coloration or increase of absorption) chemical stability against urban gazes and protection against abrasion. The absence of air gap between the encapsulation material and the optics reduces the cleaning and maintenance costs. Robust 42 mm x 62 mm (1.65" x 2.44") cross section housing made from extruded and anodized aluminum profile and screwed aluminum end caps available in silver or white (white powder coated) color as recessed, surface-mounted or pendant version. Delivered with 2 m (6.56') open end black cable. Light source assembled using state of the art automated Reel to Reel (R2R) production process supporting LED Linear™ Tj Away® thin flexible circuit board technology. In combination with ceramic LED packages a thermal resistivity of 18.5 K/W is achieved for an optimal heat dissipation (junction to profile) which guarantees an outstanding lifetime of > 50,000 hrs L80/B10. Embeds high quality japanese LEDs with 3 step MacAdams (SDCM3) binning centered on target CCT (One Bin Only) with an extended photometric code of Wxxx/339 ensuring an exceptional color consistency over the rated lifetime. Premium color rendition with a CRI of 95 and TM-30-15 up to R_f = 91 / R_g = 100 ensuring a remarkable light quality. Consistent light intensity all along the luminaire length is obtained thanks to active current regulation operated by dedicated integrated circuits (ICs) on each step. Protected against electrostatic discharge ± 2,000 V and polarity miswiring. Fully PWM dimmable for frequency > 0 Hz up to 2 kHz (flicker free for frequency higher then 1.2 kHz according to IEEE P1789 standard). Engineered and produced in Germany.

Dimensions & available lengths



Recessed Trimless

View rotated by 90°



Finish: Anodized Al-Silver/White powder coated

Tc-point (Case temp.) on the rear side of the module

Fixture build to length (not field cuttable):

L_{min}: 84 mm; L_{max}: 4,021 mm (HD25: 3,021 mm); in 62.5 mm increments
L_{min}: 3.31"; L_{max}: 13.19' (HD25: 9.91'); in 2.46" increments

Electrical & output data

Voltage	24 Volt (23 V_{min}, 25 V_{max})
Temperature[B]	Tc_{min} = -25°C / -13°F, Tc_{max} = specific, see Table below
Storage temperature	Ts_{min} = -30°C / -22°F, Ts_{max} = 70°C / 158°F
Ambient temperature	Ta_{min} = -25°C / -13°F, Ta_{max} = 40°C / 104°F
CRI / R9	up to 95 / up to 65

XOOLIGHT™ HYDRA	HD6	HD10	HD15	HD25
Power (W/m / W/ft)[A]	6 / 1.8	10 / 3.1	15 / 4.6	25 / 7.6
Efficacy (lm/W)[A] @ W850	83	83	89	86
max. length (m / ft)	4 / 13.1	4 / 13.1	4 / 13.1	3 / 9.8
Temperature Tc-point (Tc_{max})[B]	55°C / 131°F	55°C / 131°F	55°C / 131°F	60°C / 140°F

Color temperature LED tape used[C]		Color temperature delivered finished fixture		HD6	HD10	HD15	HD25
				low output → high output			
				lumen/meter (lm/m)[A] lumen/feet (lm/ft)[A] @ opal encapsulation			
W820		2,000 K	2,400 K	290 / 87	480 / 145	770 / 234	1250 / 380
W822		2,200 K	2,700 K	330 / 100	550 / 167	880 / 267	1430 / 435
W825		2,500 K	3,000 K	380 / 115	630 / 191	1010 / 307	1630 / 496
W827	W927	2,700 K	3,500 K 3,400 K	340 / 103	560 / 170	1070 / 325	1730 / 526
W830	W930	3,000 K	3,900 K 3,800 K	340 / 103	570 / 173	1130 / 343	1840 / 560
W835	W935	3,500 K	4,600 K 4,400 K	350 / 106	590 / 179	1190 / 362	1930 / 587
W840	W940	4,000 K	5,500 K 5,600 K	360 / 109	600 / 182	1220 / 371	1970 / 599
W850		5,000 K	7,200 K	500 / 151	830 / 252	1330 / 404	2160 / 657

ONE BIN ONLY

UV protected

L80/B10 > 50.000 h — Lifetime

Resistant to solvents

Wxxx/339 — Photometric code

Saltwater resistant

LM 79 — LM 79 compliant

Temporary immersion protection

LM 80 — LM 80 compliant

[A] The given data are typical values. Due to tolerances of the production process and the electrical components, values for light output and electrical power can vary up to 10%.

[B] The Tc-point should be measured in thermal equilibrium according to IEC EN 60598-1.

[C] In case of IP67 products, tolerances in the color temperature can occur.

EXL-4
EXTERIOR WALL MTD. LINEAR

Order code

Your order code	XOOLIGHT HYD	HD__	W_	__	_____	_	__	_	IP67
Order code example	XOOLIGHT HYD	HD6	W9	35	1271	A	BS	T	IP67

LED tape
HYDRA HD6 HD6
HYDRA HD10 HD10
HYDRA HD15 HD15
HYDRA HD25 HD25

Color rendering
> 80 8
> 90 (only HD6, HD10) 9

Color temperature delivered finished fixture	Color temperature LED tape used	
2,400 K	2,000 K	20
2,700 K	2,200 K	22
3,000 K	2,500 K	25
3,500 K 3,400 K	2,700 K	27
3,900 K 3,800 K	3,000 K	30
4,600 K 4,400 K	3,500 K	35
5,500 K 5,600 K	4,000 K	40
7,200 K	5,000 K	50

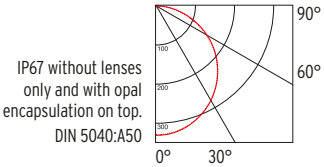
Length
L_{min}: 84 mm (3.31");
L_{max}: 4,021 mm (13.19'); HD25: 3,021 mm (9.91');
in 62.5 mm (2.46") increments

Housing material
Anodized Al-Silver A
White powder coated W

Cable feed
Back side, 2 m / 6.56' BS
Front side, 2 m / 6.56' FS

Trim
Trimless T
Recessed R

Ingress Protection
IP67 IP67



IP67 without lenses only and with opal encapsulation on top.
DIN 5040:A50



Please choose your accessories

required

Recommended power supply	Art.-#
☐ Power Supply Unit IP67	16000153

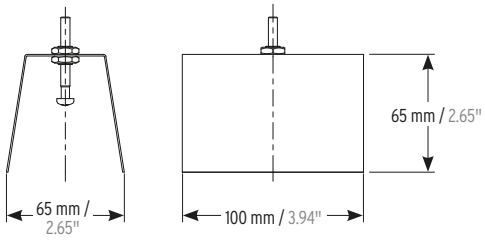
optional

Recommended control unit	Art.-#
☐ Control System White/IQ-White	16000268-DT6

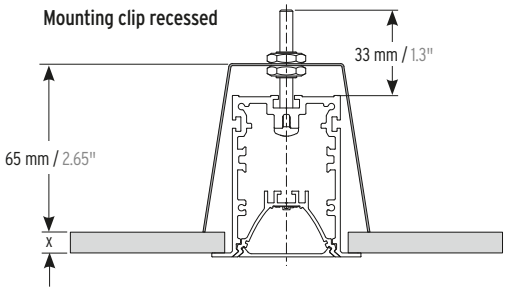
Pendant	Art.-#
☐ VarioPendant 4262	13000106

Mounting clip recessed	Art.-#
☐ VarioClamp Contour 4262R	13000080

VarioClamp



Mounting clip recessed



iLIGHT TECHNOLOGIES
www.ilight-tech.com

Plexineon Signage

PRODUCT SUMMARY



PRODUCT FEATURES

- Bright, even-toned color
- Durable construction
- Long life
- Energy efficient
- Low voltage
- Easy to install
- Factory bent
- Exterior and interior signage, billboard signs, and more

Sign Uses: Direct View
- Exterior building signs
- Interior signs
- Interior window signs
- Accents

Sign Uses: Indirect View
- Halo Lighting

Mounting Options
- Loose letters
- Custom
- Black, smoke or clear polycarbonate backing

Technical Imformation

Light Colors Available
- Amber
- Blue
- Green
- Magenta
- Orange
- Red
- Rose
- Teal

Daytime Colors Available
- Red
- Yellow

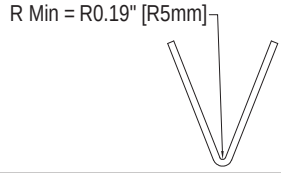
Voltage
- 24V DC

Housing Color
- Silver

White Series Available
- White 1X
- White 2X

White Temperatures Available
- 2800°K
- 3500°K
- 4500°K
- 6500°K

Plexineon Factory Bending
- iLight can factory bend down to 3/16" for letters or tighter curves



Easy Bends[2]



Standard Block Font
- While most signs iLight manufactures involve custom design, we also offer a standard block font

Block Font Sizes
- 4½"
- 6"
- 8"

STANDARD FONT

iLight Technologies • 118 South Clinton, Suite 370 • Chicago, IL 60661 • T 312.876.8630 • F 312.876.8631 • www.ilight-tech.com

iLIGHT TECHNOLOGIES
www.ilight-tech.com

Plexineon Signage

Gallery

Mounted on Polycarb Backing







Mounted in Channel





Standard Font Mounted on Rail



iLight Technologies • 118 South Clinton, Suite 370 • Chicago, IL 60661 • T 312.876.8630 • F 312.876.8631 • www.ilight-tech.com

PARKING AREA LIGHT
FIXTURE – COLOR: BLACK

LED AREA LIGHTS - LSI SLICE LARGE (XLCL)



LIGHT OUTPUT - XLCL

		Lumens (Nominal) Type 3	Type FT	Type 5	FTA	Watts (Nominal)
Cool White	SS	45,800	49,500	50,700	51,300	435
	HO	53,400	57,300	59,200	59,100	542
Neutral White	SS	45,600	48,600	49,600	50,400	435
	HO	52,800	56,300	57,600	57,700	542

LED Chips are frequently updated therefore values may increase.

US patent D726,947 7,828,456 8,002,428 8,177,386 8,434,893 8,567,983 and US & Int'l. patents pending

SMARTTEC™ - LSI drivers feature integral sensor which reduces drive current, when ambient temperatures exceed rated temperature.

ENERGY SAVING CONTROL OPTION - DIM - 0-10 volt dimming enabled. Availabl with integrated LSI Controls wireless modules.

LEDS - Select high-brightness LEDs in Cool White (5000K), or Neutral White (4000K) color temperature, 70 CRI.

DISTRIBUTION/PERFORMANCE - Types 3, 5, FT, FT-L, FT-R and FTA available. Type FTA available for single automotive front row design. FT-L and FT-R allow for D180 mounting configurations with factory set optics for applications such automotive front row. Exceptional uniformity creates bright environment at lower light levels.

HOUSING - One-piece, die-formed aluminum housing contains factory prewired driver in a gasketed, weather-resistant wiring compartment. Hinged wiring access door (with safety lanyard) located underneath. Fixture is IP65 rated.

OPTICAL UNIT - Clear tempered optical-grade flat glass lens permanently sealed to weather-tight aluminum optic frame (includes pressure-stabilizing breather).

MOUNTING - Tapered rear design allows fixtures to be mounted in 90° and 120° configurations. Use with 5" traditional drilling pattern. A round pole plate (RPP2) is required for mounting to round poles. Wall mount available by ordering wall mounting bracket (BKS-BO-WM-*-CLR). Mast Arm mounting available by ordering BKA-NM-MA-5-XLCL-CLR adaptor (for 2" pipe). See Accessories for all brackets.

ELECTRICAL - Two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Location Category C. Available with universal voltage power supply 120-277VAC (50/60Hz input) and 347-480 VAC. Optional twistlock photocell receptacle is available. Photocell must be ordered separately.

DRIVER - Available in SS (Super Saver) and HO (High Output) drive currents. Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can be easily accessed.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F)

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Available in black, bronze and white. Other standard LSI finishes available. Consult factory.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

SHIPPING WEIGHT (in carton) - 55 lbs./24.9Kg

LISTING - UL listed to US and international safety standards. Suitable for wet locations.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.

ARRA Funding Compliant · DLC · c UL us LISTED wet location · RoHS COMPLIANT · FC · IP65

Fixtures comply with ANSI C136.31-2010 American National Standard for Roadway Lighting Equipment - Luminaire Vibration 1.5G requirements.

Project Name _____ Fixture Type _____

Catalog # _____

03/17/17

© 2017
LSI INDUSTRIES INC.

PARKING AREA LIGHT
FIXTURE – COLOR: BLACK

LED AREA LIGHTS - LSI SLICE LARGE (XLCL)

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XLCL FT LED HO CW UE WHT PCR**

Prefix	Distribution	Light Source	Drive Current	Color Temperature	Input Voltage	Finish	Optional Controls	Options
XLCL	3 - Type III 5 - Type V FT - Forward Throw FT-L - Forward Optic Rotated for D180 Mount (Left Side) FT-R - Forward Optic Rotated for D180 Mount (Right Side) FTA – Forward Throw Automotive	LED	SS - Super Saver HO -High Output	CW - Cool White (5000K) NW - Neutral White (4000K)	UE - Universal Voltage (120-277V) 347-480 Universal Voltage (347-480V)	BLK - Black BRZ - Bronze WHT - White	Wireless Controls System [5] PCM - Platinum Control System PCMH - Host/Satelite Platinum Control System GCM - Gold Control System GCMH - Host/Satelite Gold Control System	DIM - 0-10V Dimming (from External Signal) PCR - Photoelectric Control Receptacle[1]

LUMINAIRE EPA CHART - XLCL

	Single	.7
	D180°	1.4
	D90°	1.1
	T90°	2.3
	TN120°	2.3
	Q90°	2.6

Note: House Side Shield adds to fixture EPA. Consult Factory.

ACCESSORY ORDERING INFORMATION

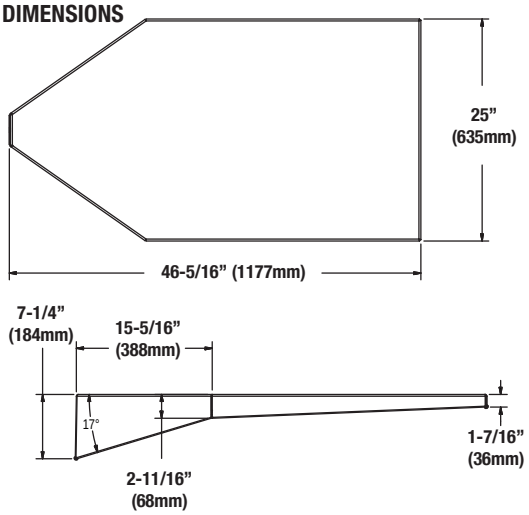
(Accessories are field installed)

Description	Order Number
BKS-BO-WM-*-CLR Wall Mount Plate	123111CLR
XLCL-3/FT-HSS RM - External House Side Shield (Black only - rear mounted)	610098BLK[2]
XLCL-FT-L/FT-R-HSS SM - External House Side Shield (Black only - side mounted)	610100BLK[2]
BKA-NM-MA-5-XLCL-CLR Mast Arm Adaptor	617865 CLR
RPP2 - Round Pole Plate	162914CLR
PC120 Photocell for use with PCR option (120V)	122514[3]
PC208-277 Photocell for use with PCR option (208V, 240V, 277V))	122515[3]
PC347 Photocell for use with PCR option (347V)	159516[3]
PC480 Photocell for use with PCR option (480V)	225180[3]
FK120 - Single Fusing (120V)	FK120[4]
FK277 - Single Fusing (277V)	FK277[4]
DFK208,240 - Double Fusing (208V, 240V)	DFK208,240[4]
DFK480 Double Fusing (480V)	DFK480[4]
FK347 Single Fusing (347V)	FK347[4]

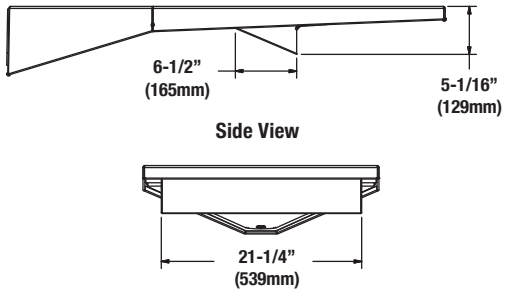
FOOTNOTES:

1- Photocell must be ordered separately. See Accessories.
2- House Side Shields add to fixture EPA. Consult factory.
3- Factory installed PCR option required. See Options.
4- Fusing must be located in hand hole of pole.
5- For wireless controls information and accessories, see Controls Section.

DIMENSIONS

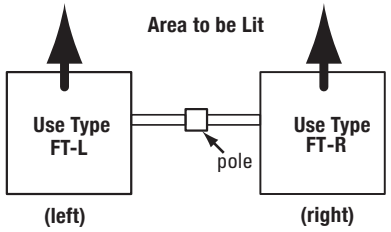


House Side Sheilds

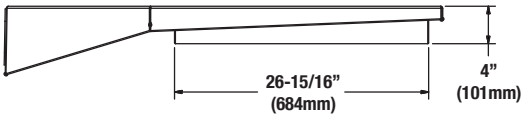


Rear Mount (610098BLK)

LEFT AND RIGHT VERSIONS OF TYPE FT REFLECTORS (TOP VIEW)



Note: Optics are not field-rotatable. For D180 Forward Throw installations specify left (FT-L) and/or right (FT-R) side mounting. Orientation is based on standing at the pole and looking out at the area to be lit.



Side Mount (610100BLK)

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LSI INDUSTRIES INC.

LED AREA LIGHTS - LSI SLICE LARGE (XLCL)

BUG LISTING

XLCL - Type 3

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	53,365	545	98	B5-U0-G4
	CW-HSS	36,015	543	66	B4-U0-G4
	NW	52,840	544	97	B5-U0-G4
	NW-HSS	35,358	543	65	B4-U0-G4
SS	CW	45,829	424	108	B5-U0-G4
	CW-HSS	31,300	427	73	B4-U0-G3
	NW	45,570	428	106	B5-U0-G4
	NW-HSS	30,512	429	71	B4-U0-G3

XLCL - Type 5

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	59,153	547	108	B5-U0-G4
	CW-HSS	36,076	544	66	B4-U0-G4
	NW	57,636	545	106	B5-U0-G4
	NW-HSS	35,681	544	66	B4-U0-G4
SS	CW	50,680	434	117	B5-U0-G4
	CW-HSS	31,200	427	73	B4-U0-G4
	NW	49,629	434	114	B5-U0-G4
	NW-HSS	29,657	422	70	B4-U0-G4

XLCL - Type FTA

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	59061	533	111	B4-U0-G3
	CW-HSS	55,330	533	104	B4-U0-G3
	NW	57,718	533	108	B4-U0-G3
	NW-HSS	54,094	533	102	B4-U0-G3
SS	CW	51,332	429	120	B4-U0-G3
	CW-HSS	48,395	429	113	B4-U0-G3
	NW	50,417	429	117	B4-U0-G3
	NW-HSS	47,071	429	110	B4-U0-G2

XLCL - Type FT

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	57,320	545	105	B4-U0-G5
	CW-HSS	41,895	544	77	B3-U0-G5
	NW	56,282	546	103	B4-U0-G5
	NW-HSS	41,730	544	77	B3-U0-G5
SS	CW	49,499	437	113	B4-U0-G5
	CW-HSS	37,097	427	87	B3-U0-G4
	NW	48,586	437	111	B4-U0-G5
	NW-HSS	35,457	425	83	B3-U0-G4

XLCL - Type FT-L

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	58,144	545	107	B5-U0-G5
	CW-HSS	48,083	547	88	B5-U0-G5
	NW	57,001	544	105	B5-U0-G5
	NW-HSS	45,910	544	84	B5-U0-G5
SS	CW	49,913	435	115	B5-U0-G5
	CW-HSS	41,457	428	97	B5-U0-G5
	NW	48,751	434	112	B5-U0-G5
	NW-HSS	39,767	423	94	B5-U0-G5

XLCL - Type FT-R

Drive Current	Color Temp.*	Lumens	Watts	LER	BUG Rating
HO	CW	58,144	545	107	B5-U0-G5
	CW-HSS	48,083	547	88	B5-U0-G5
	NW	57,001	544	105	B5-U0-G5
	NW-HSS	45,910	544	84	B5-U0-G5
SS	CW	49,913	435	115	B5-U0-G5
	CW-HSS	41,457	428	97	B5-U0-G5
	NW	48,751	434	112	B5-U0-G5
	NW-HSS	39,768	423	94	B5-U0-G5

* Color Temperature: NW-4000K, CW-5000K

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LSI INDUSTRIES INC.

ROOF DECK PEDESTAL
PAVER SYSTEM



WOOD TILES

July 2019

Beauty, Longevity, and Exceptional Value

BISON WOOD TILES

Bison Wood Tiles offer the design flexibility to create versatile, unique outdoor spaces. Commercial grade, responsibly harvested, hardwood tiles are weather resistant and available in standard and FSC® Certified (SCS-COC-002585) species.

- Species include: Bamboo, Cumaru, Garapa, Ipê, Mahogany, and Massaranduba
- Exclusive Bison FS-1 Fastening Kit & Continuous Kerf Cut Design allows for easy tile attachment, removal, and replacement
- Modular sizes 2′ x 2′, 4′ x 2′, 6′ x 2′, 8′ x 2′, and 30″ x 30″
 - Pedestals to be spaced on a 2′ grid for all Bison Wood Tile sizes*
- Custom sizes available
- Full System Warranty available when installed with Bison Pedestals
- May be covered by one or more Patents
- Bison Ipê Wood Tile Systems can meet:
 - ASTM E108-07a Class A Spread of Flame
 - ASTM C1028-07 Slip Resistance
 - ASTM TAS108-95 Wind Uplift
 - Seismic Design Categories (SDC) A-F

FSC
www.fsc.org
FSC® C013454
The mark of responsible forestry



*Bison 30″ x 30″ Wood Tiles installed on a 30″ grid.

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Bison Innovative Products | 701 Osage Street, Unit 120, Denver CO 80204 USA | 800-333-4234 | www.bisonip.com



Bison Ipê Wood Tiles



Model: WT-IPE-24-SMOOTH

Model: WT-IPE-24-SMOOTH
WT-IPE-24-RIBBED
WT-IPE-3030-10-SMOOTH
Species: Ipê
Color: Brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 3,680 lbs.
Dimensions: 23.875" x 23.875" x 1.69"
29.875" X 29.875" X 1.69"
Weight: 24 lbs. / 34 lbs.
Weight PSF: 6 PSF / 5.4 PSF
Bison Continuous Kerf cut design



Model: WT-IPE-3030-10-SMOOTH



Model: WT-IPE-48
Species: Ipê
Surface: Smooth or Ribbed
Color: Brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 3,680 lbs.
Dimensions: 47.9375" x 23.875" x 1.69"
Weight: 48 lbs.
Weight PSF: 6 PSF
Bison Continuous Kerf cut design

*Wood tile colors may differ than pictured and change without notice.

ROOF DECK PEDESTAL
PAVER SYSTEM



Bison Cumaru Wood Tiles



Model: WT-CUMARU-24
Species: Cumaru
Surface: Smooth
Color: Golden brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 3,540 lbs.
Dimensions: 23.875" x 23.875" x 1.69"
Weight: 24 lbs.
Weight PSF: 6 PSF
Bison Continuous Kerf cut design



Model: WT-CUMARU-48
Species: Cumaru
Surface: Smooth
Color: Golden brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 3,540 lbs.
Dimensions: 47.9375" x 23.875" x 1.69"
Weight: 48 lbs.
Weight PSF: 6 PSF
Bison Continuous Kerf cut design

*Wood tile colors may differ than pictured and change without notice.



Bison FSC© Ipê Wood Tiles



Model: WT-FSC-100%-IPE-24
Species: Ipê
Surface: Smooth
Color: Brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 3,680 lbs.
Dimensions: 23.875" x 23.875" x 1.69"
Weight: 24 lbs.
Weight PSF: 6 PSF
Bison Continuous Kerf cut design

Bison FSC© Garapa Wood Tiles



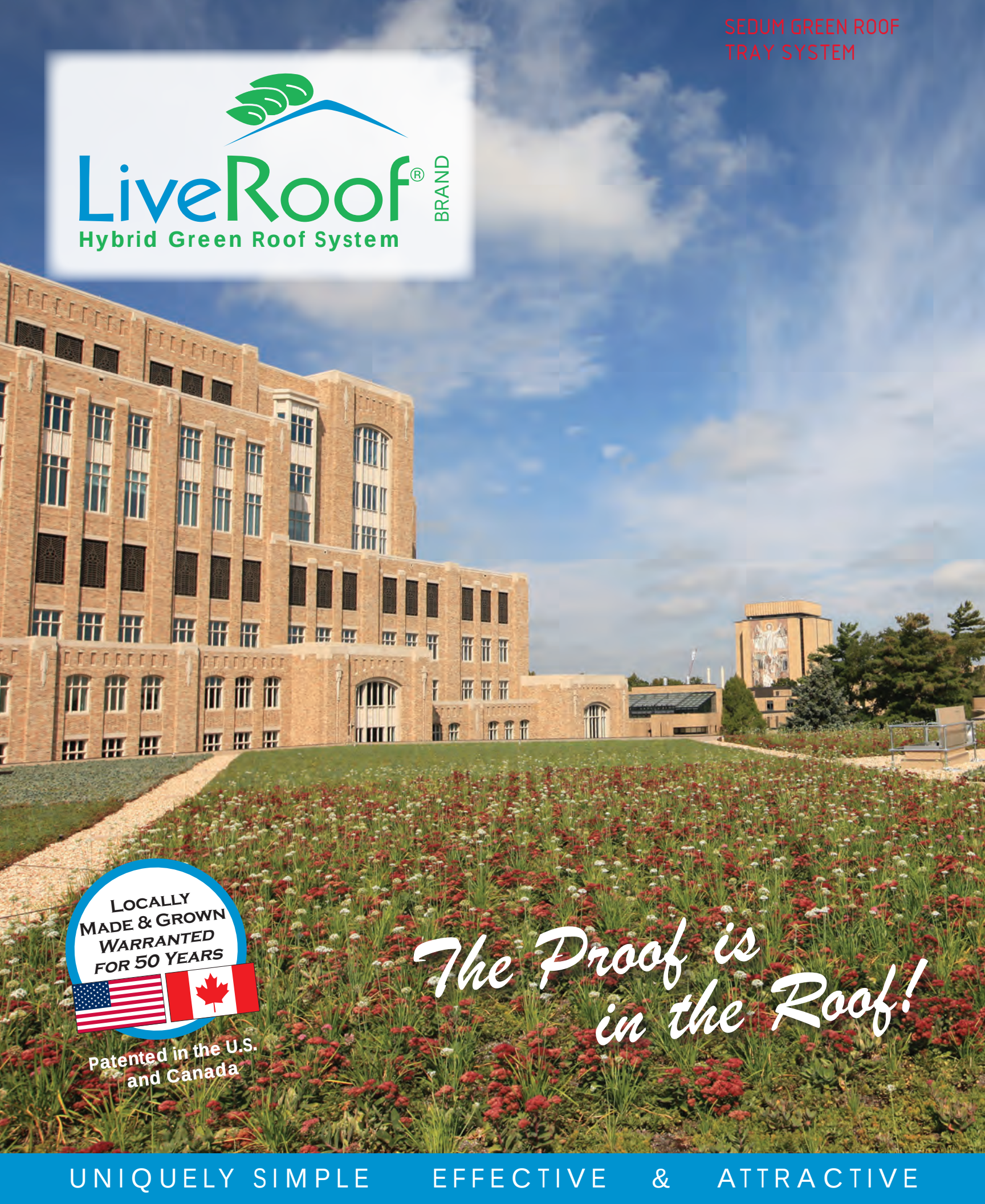
Model: WT-FSC-100%-GARAPA-24
Species: Garapa
Surface: Smooth
Color: Golden brown*
ASTM E108: Class A Spread of Flame
Janka Hardness Rating: 1,630 lbs.
Dimensions: 23.875" x 23.875" x 1.69"
Weight: 24 lbs.
Weight PSF: 6 PSF
Bison Continuous Kerf cut design

*Wood tile colors may differ than pictured and change without notice.

SEDUM GREEN ROOF
TRAY SYSTEM

LiveRoof® BRAND

Hybrid Green Roof System

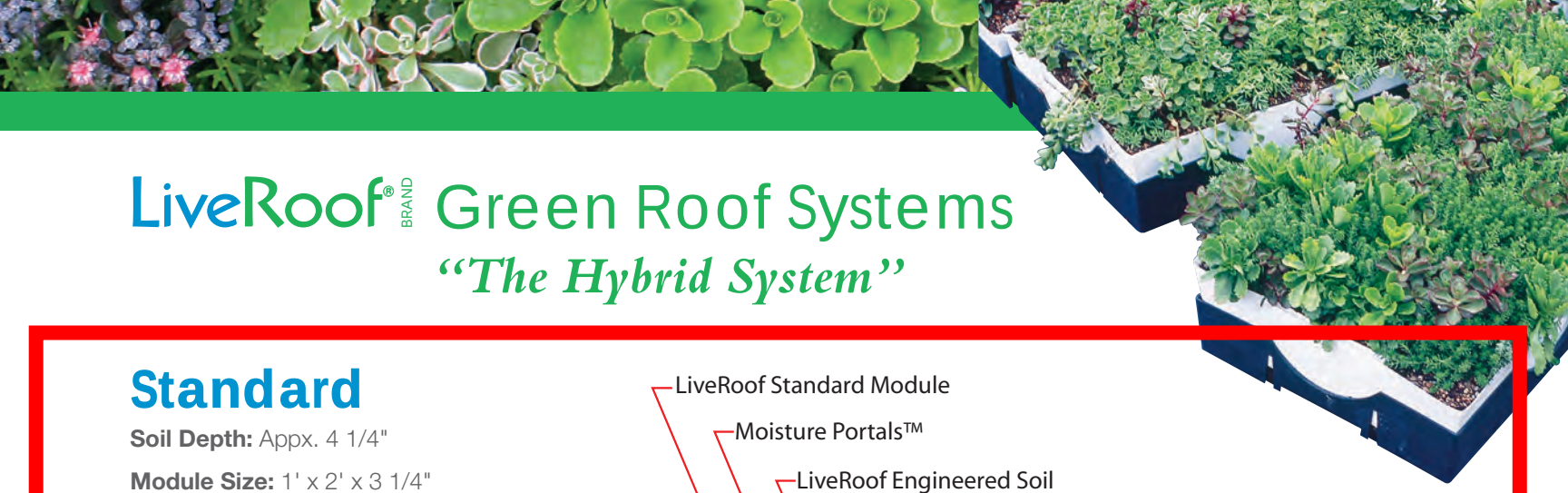


LOCALLY MADE & GROWN
WARRANTED FOR 50 YEARS

Patented in the U.S. and Canada

The Proof is in the Roof!

UNIQUELY SIMPLE EFFECTIVE & ATTRACTIVE



LiveRoof® BRAND Green Roof Systems

"The Hybrid System"

Standard

Soil Depth: Appx. 4 1/4"

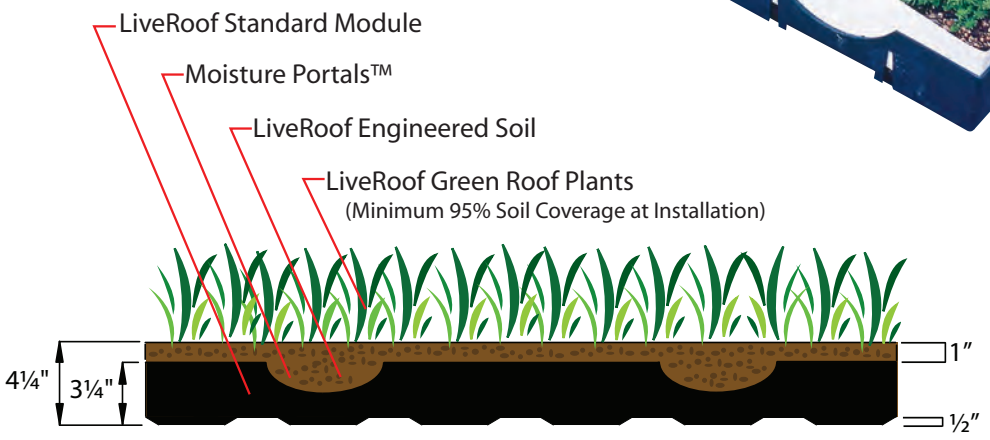
Module Size: 1' x 2' x 3 1/4"

Weight: Appx. 27-29 lbs/sf saturated and vegetated.

Dry Weight: Appx. 20 lbs/sf (confirm with local grower.)

Merits: Maximizes storm water management, integrates perfectly with new construction and often times existing buildings.

Plants: Succulent ground covers, water conserving accent plants, and hardy spring blooming bulbs.







SEDUM GREEN ROOF TRAY SYSTEM

Lite

Soil Depth: Appx. 2 1/2"

Module Size: 1' x 2' x 1 3/4"

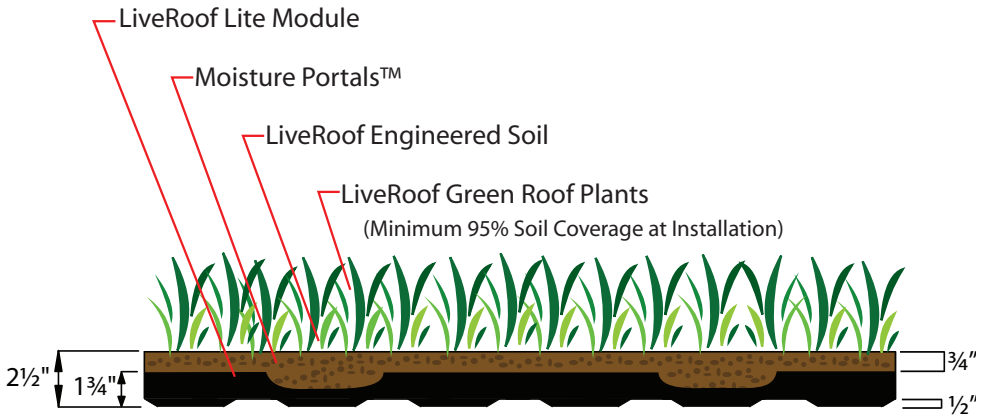
Weight: Appx. 15-17 lbs/sf saturated and vegetated.

Dry Weight: Appx. 12 lbs/sf (confirm with local grower.)

Merits: Ideal for retrofit projects where load limitations exist.

Plants: Succulent ground covers and water conserving accent plants.

Note: Not recommended for hot climates.





X-Lite System is also available in some regions. 10 lbs./sq. ft.

Copyright 2019

LiveRoof® BRAND Hybrid System

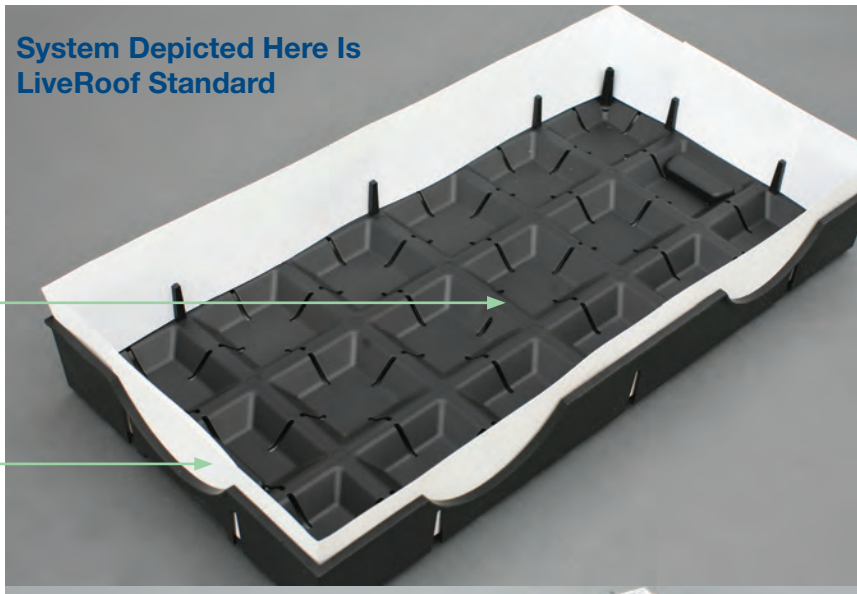
(Patented in the U.S. and Canada)

STEP 1

First; The Licensed Grower inserts the LiveRoof® Soil Elevator™ into LiveRoof module.

Horticulturist designed positive drainage configuration for healthy roots.

Moisture Portals™ allow moisture and roots to grow from one module to the next and for soil-to-soil contact.



STEP 2

Next; The LiveRoof module is filled to the top of Soil Elevator with LiveRoof engineered soil. Soil is settled by vibration and mechanically screeted off.

Ergonomic design, configuration and handles make LiveRoof® the safest, most efficient module to handle.



STEP 3

Then, the LiveRoof Plants are grown to maturity approximately 1 inch above the LiveRoof module. Photo demonstrates the soil interconnectivity that exists once the soil elevator is removed as in Step 5. In the LiveRoof Lite System plants are approximately 3/4" above the module and in the LiveRoof Deep System they are approximately 2¾" above the module.



See inside back cover for LiveRoof grower nearest you.

Copyright 2019

SEDUM GREEN ROOF TRAY SYSTEM



4 STEP

Upon delivery to the roof, the installer sets LiveRoof modules tightly in place from parapet to parapet or within LiveRoof RoofEdge™, depending upon design.



5 STEP

Throughout the installation process, the LiveRoof Soil Elevators™ are removed for a beautiful, seamless instantly mature green roof.

Note: if biodegradable soil elevators are used, they are simply left in place.

Modules disappear under the cover of soil and plants.



6 STEP

Finally, the entire system is watered thoroughly to settle any loose soil and to get your LiveRoof off to a great start.

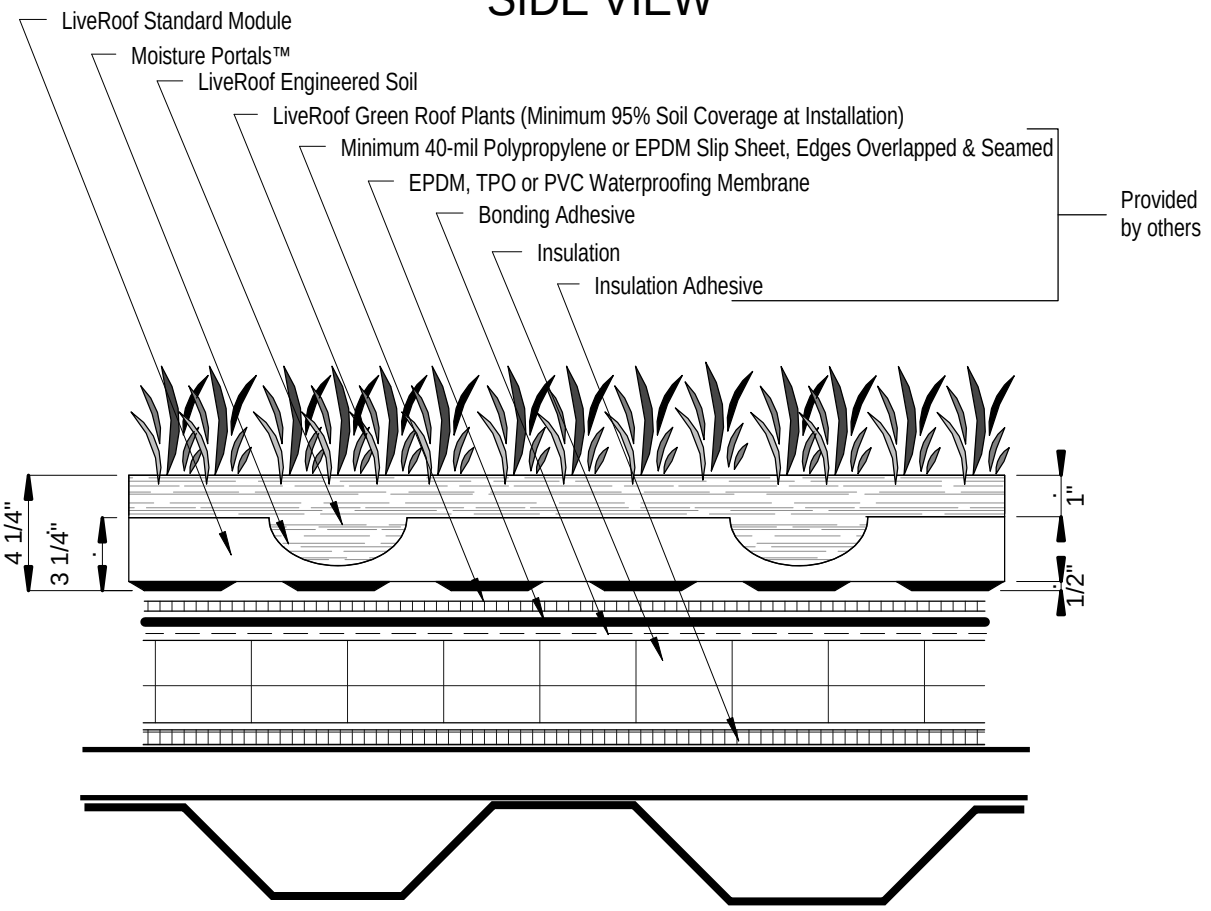
No ugly container to see, just beautiful greenery.

Copyright 2019

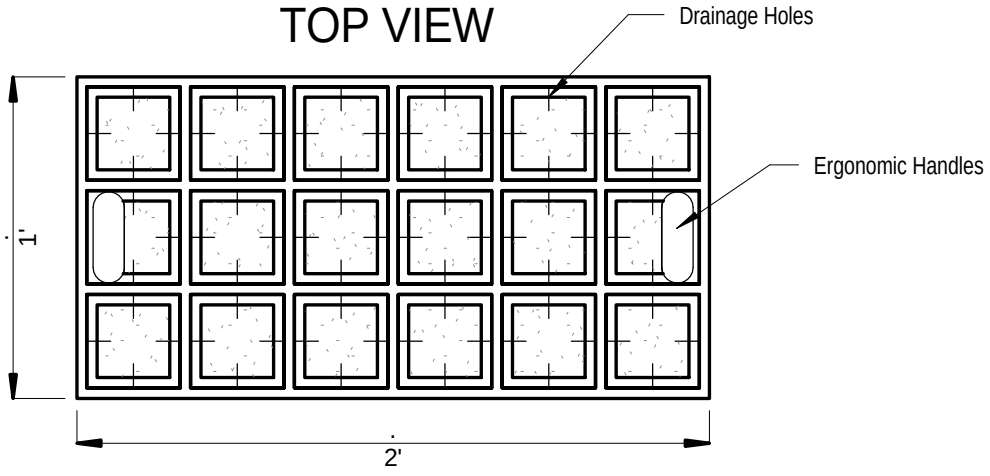
LiveRoof STANDARD SYSTEM

Over Conventional Roofing Assembly

SIDE VIEW



TOP VIEW



LiveRoof System Saturated Weight: 27-29 lbs / sf

NOT TO SCALE

STANDARD A

ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING LIVEROOF INSTALLATIONS. LIVEROOF DOES NOT ACCEPT RESPONSIBILTY FOR ENGINEERING BASED ON ILLUSTRATIONS. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS AND SUITABLE DESIGN.

LiveRoof, LLC
P.O. Box 533
Spring Lake, MI 49456

(800) 875-1392
www.liveroof.com

LiveRoof

Series 10 3-12.5 Ton Package

Johnson Controls Single Package R-410A Air Conditioner

Project Name: **Sellinger - Detroit Theatre** Unit Model #: **J07ZJN18R2D2BAA2A2**

Quantity: **1** Tag #: **RTU-1,3** System: **J07ZJN18R2D2BAA2A2**

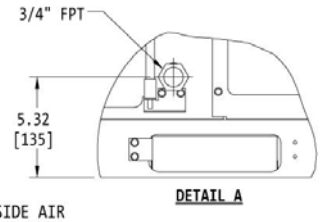
Consolidated Drawing

NOTES:
1. FOR OUTDOOR USE ONLY.
2. WEIGHTS SHOWN ARE FOR COOLING ONLY UNITS.
3. MIN. CLEARANCES TO BE:
 RIGHT SIDE: 12 [305]
 LEFT SIDE: 36 [915]
 FRONT: 36 [915]
 REAR: 36 [915]
 TOP: 72 [1830]
 BOTTOM: 0 [0]
4. TO REMOVE THE SLIDE-OUT DRAIN PAN, A REAR CLEARANCE OF 60 in (1525 mm) IS REQUIRED. IF SPACE IS UNAVAILABLE, THE DRAIN PAN CAN BE REMOVED THROUGH THE FRONT BY SEPARATING THE CORNER WALL.
5. FOR SMALLER SERVICE AND OPERATIONAL CLEARANCES CONTACT YOUR APPLICATION ENGINEERING DEPARTMENT.
6. DOWNFLOW DUCTS DESIGNED TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY. IF UNIT IS MOUNTED SIDE SUPPLY, IT IS RECOMMENDED THAT THE DUCTS ARE SUPPORTED BY CROSS BRACES, AS DONE ON ACCESSORY ROOF CURBS.
7. SIDE DUCT FLANGES ARE 0.75" HIGH. BOTTOM DUCTS DO NOT HAVE FLANGES.
8. MINIMUM CONDENSATION TRAP HEIGHT SHALL BE 1.5 TIMES THE LOWEST NEGATIVE STATIC.
9. DIMENSIONS IN [] ARE IN MILLIMETERS OR KILOGRAMS.
10. OPTIONAL COIL GUARDS, POWER EXHAUST, GAS HEAT, ECONOMIZER, DISCONNECT SWITCH, CONVENIENCE OUTLET, AND BAROMETRIC RELIEF AND FRESH AIR HOODS SHOWN.
11. EXCEPT XP (HEAT PUMP) UNITS.

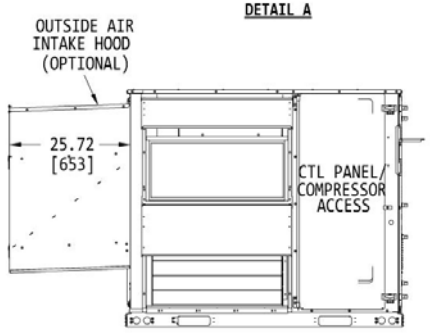
DIRECTION OF AIRFLOW

CENTER OF GRAVITY

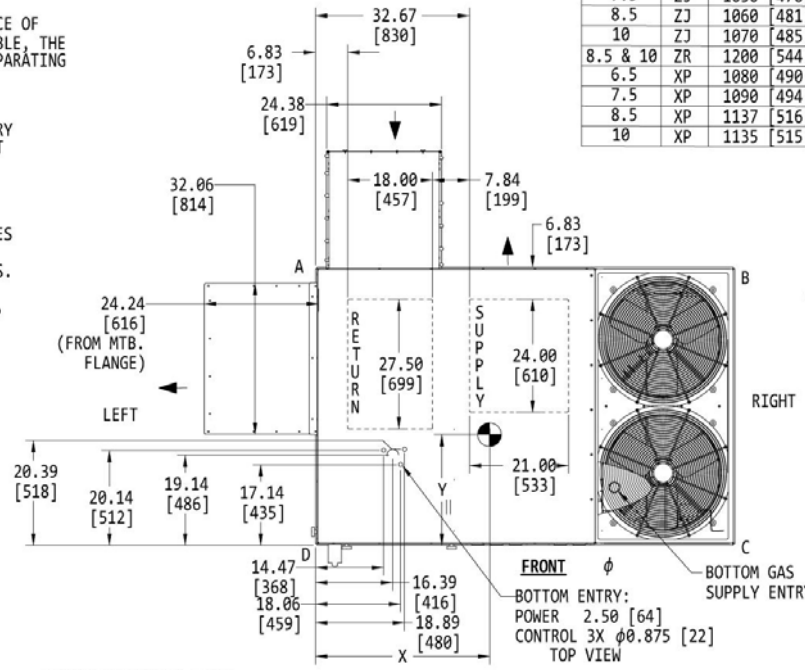
TONNAGE	UNIT	OPERATING WEIGHT (LBS) (BASE UNIT)	CENTER OF GRAVITY LOCATION (BASE UNIT) X	Y	4 POINT CORNER LOADS (LBS) (BASE UNIT) A	B	C	D
8.5	ZF	1007 [458]	38 [965]	24 [610]	235 [107]	175 [79]	255 [116]	342 [155]
10	ZF	1103 [501]	38 [965]	24 [610]	257 [117]	192 [87]	279 [127]	375 [170]
8.5	ZH	1030 [467]	38 [965]	24 [610]	240 [109]	179 [81]	261 [118]	350 [159]
10	ZH	1090 [494]	38 [965]	24 [610]	254 [115]	189 [86]	276 [125]	371 [168]
6.5	ZJ	1030 [467]	39 [991]	25 [635]	245 [111]	191 [87]	260 [118]	333 [151]
7.5	ZJ	1050 [476]	39 [991]	25 [635]	250 [113]	195 [89]	265 [120]	340 [154]
8.5	ZJ	1060 [481]	38 [965]	24 [610]	247 [112]	184 [84]	268 [122]	360 [163]
10	ZJ	1070 [485]	39 [991]	24 [610]	245 [111]	191 [87]	278 [126]	357 [162]
8.5 & 10	ZR	1200 [544]	38 [965]	25.5 [648]	297 [135]	221 [100]	291 [132]	390 [177]
6.5	XP	1080 [490]	38 [965]	25 [635]	262 [119]	195 [89]	266 [121]	357 [162]
7.5	XP	1090 [494]	38 [965]	23 [584]	243 [110]	181 [82]	284 [129]	381 [173]
8.5	XP	1137 [516]	38 [965]	25.5 [648]	282 [128]	210 [95]	276 [125]	370 [168]
10	XP	1135 [515]	38 [965]	25.5 [648]	281 [127]	209 [95]	275 [125]	369 [167]

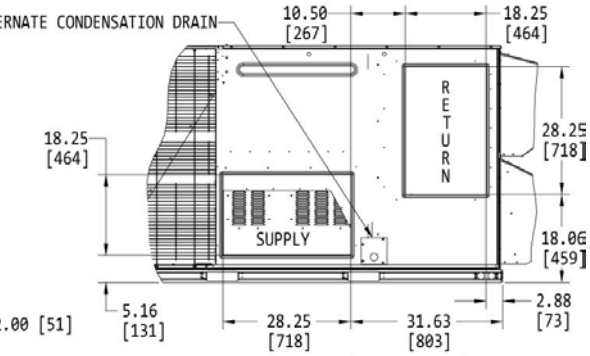


DETAIL A

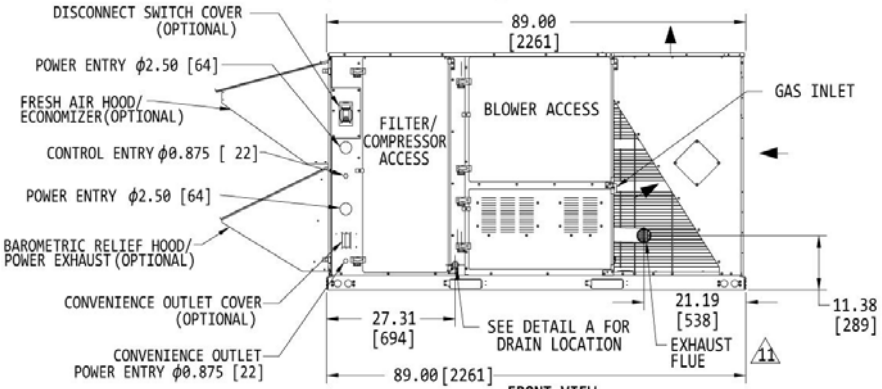


LEFT VIEW

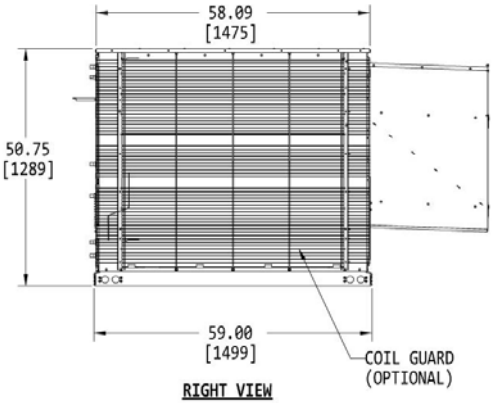




REAR (PARTIAL VIEW)
(INTAKE HOOD NOT SHOWN IN THIS VIEW)



FRONT VIEW
(OPTIONAL FRONT COIL GUARD NOT SHOWN IN THIS VIEW)



RIGHT VIEW

Series 10 3-12.5 Ton Package

Johnson Controls Single Package R-410A Air Conditioner

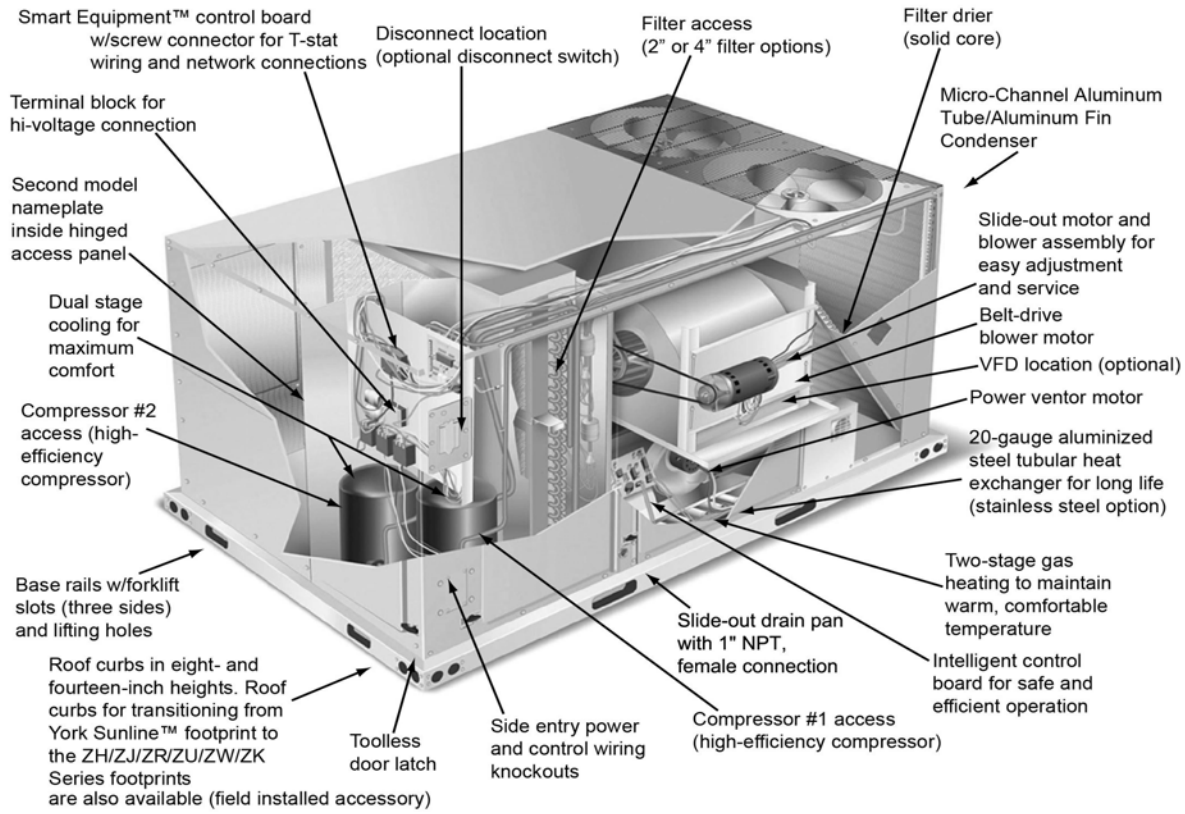
2857 ROOFTOP UNIT

Project Name: **Sellinger - Detroit Theatre** Unit Model #: **J07ZJN18R2D2BAA2A2**

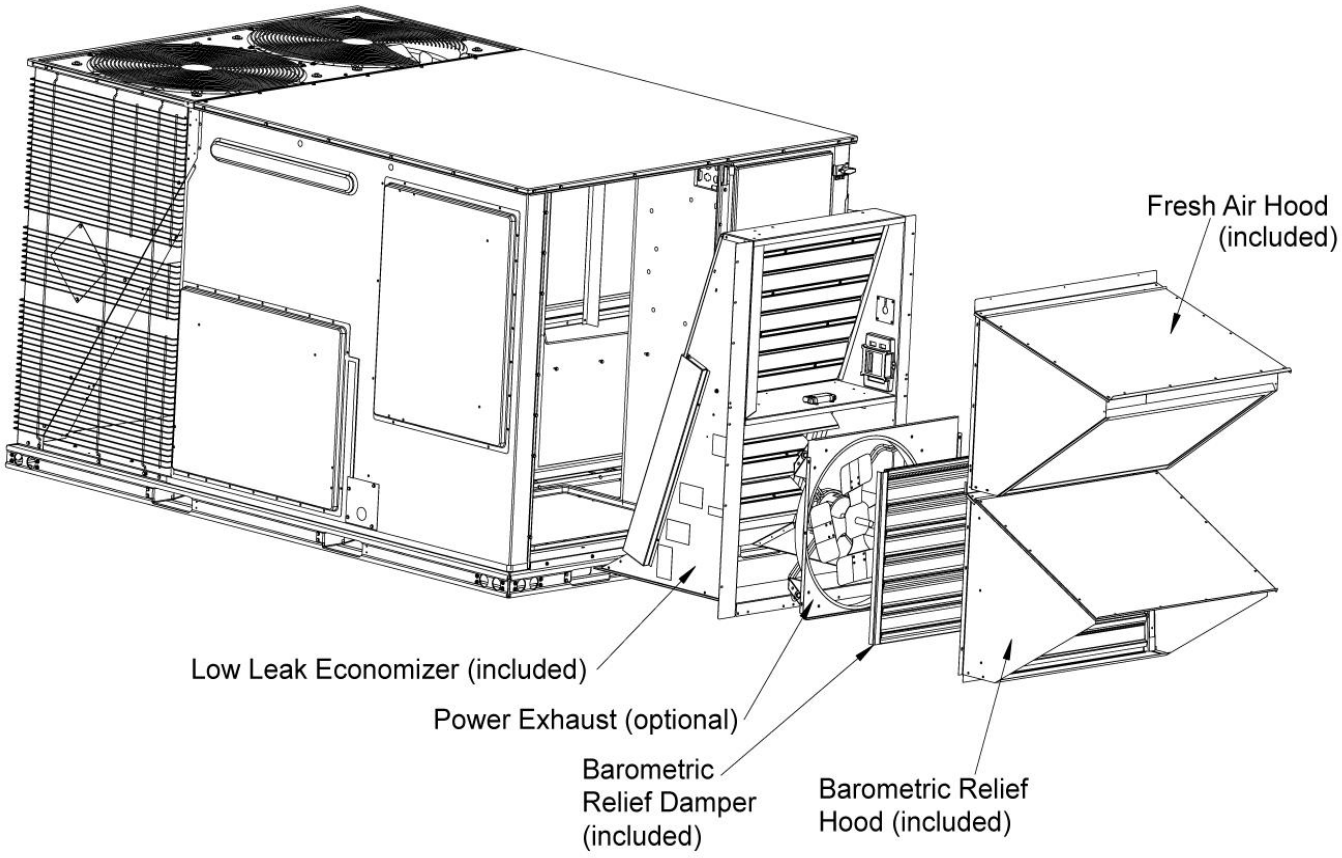
Quantity: **1** Tag #: **RTU-1,3** System: **J07ZJN18R2D2BAA2A2**

Component Locations

Cooling With Gas Heat (6.5 Through 10 Tons)



Low Leak Downflow Economizer (shown with optional Power Exhaust)



Low leak economizers are capable achieving low leakage rates of 3 cfm/sq. ft at 1" of static pressure, meeting or exceeding the following standards:

ASHRAE 90.1-2010
ASHRAE 62
AMCA 511 (licensed as Class 1A damper)
International Energy Conservation Code (IECC)
California Title 24

The outdoor intake opening shall be covered with a rain hood that matches the exterior of the unit. Water eliminator/filters shall be provided.

Simultaneous economizer/compressor operation is also possible. Dampers shall fully close on power loss.

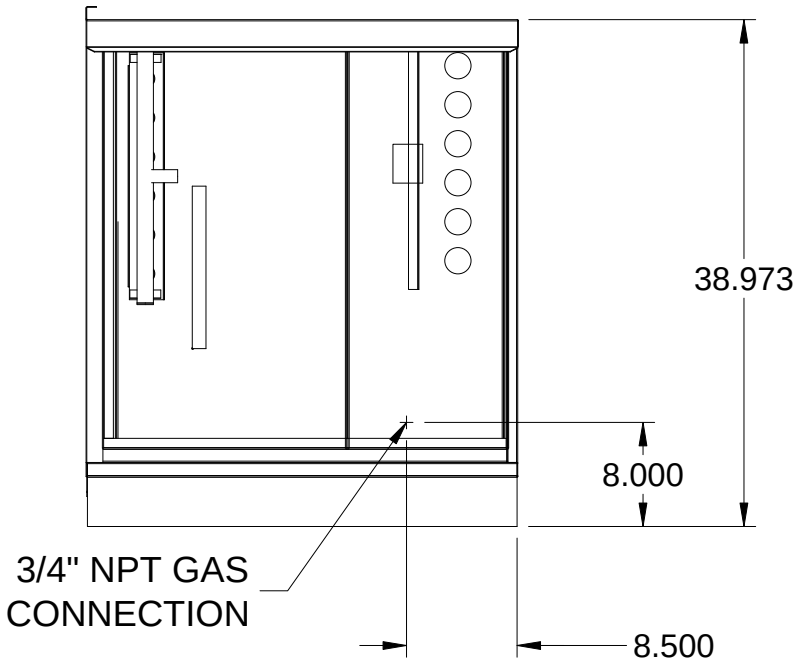
Heating Specifications

Heating Performance										
Type	Gas Type	Gas Pressure		Capacity (MBH)		Temperature Rise		Turndown	Performance	
		Min (in. wg)	Max (PSI)	Input	Output	Min (°F)	Max (°F)		EAT (°F)	LAT (°F)
Indirect Gas Furnace	Natural	6	0.5	150.0	120.0	21.9	87.1	4:1	1.0	88.5

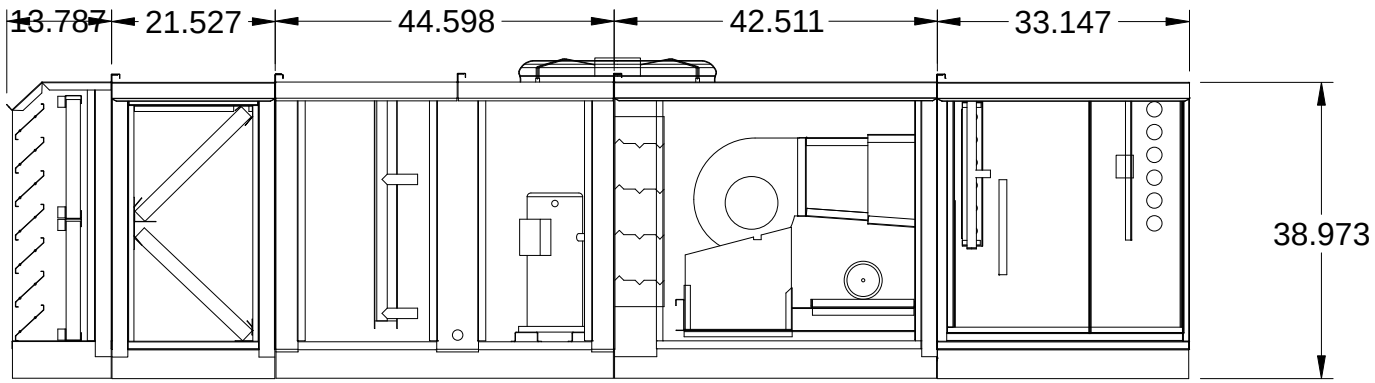
Heating Information				
Heat Exch. Material	Venting	Venting Method	Gas Pressure Regulators	Heat Exchanger Warranty
Stainless Steel	Outdoor	Standard	-	5 Year

Unit Details	
ANSI Standard Z83.8 and CSA 2.6	Power Venting
Direct Spark Ignition	24 Volt Control Power
Stainless Steel Heat Exchanger Tubes	5 year heat exchanger warranty

Gas Connections

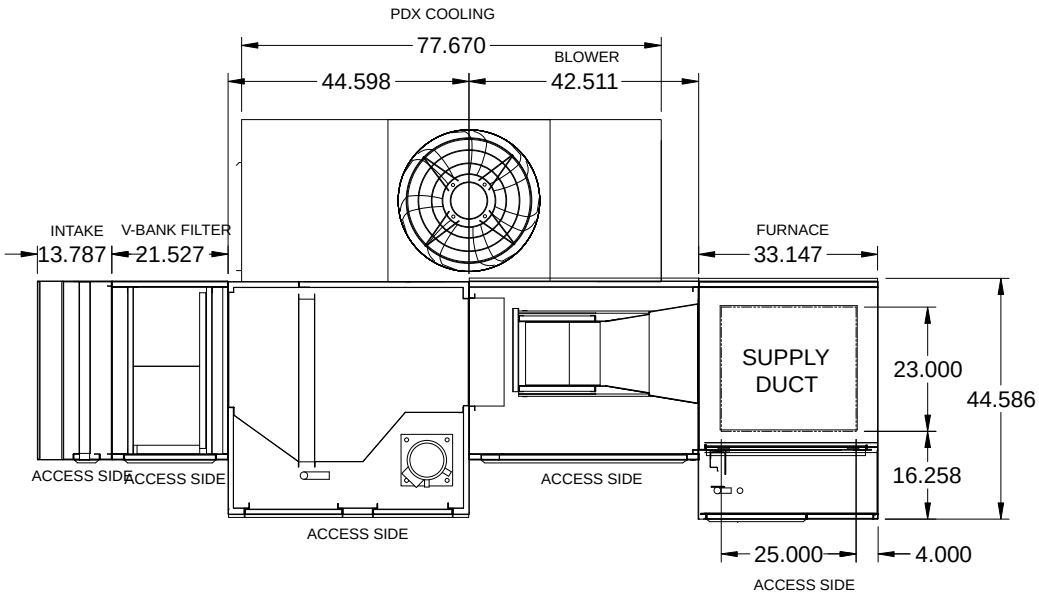


ELEVATION VIEW



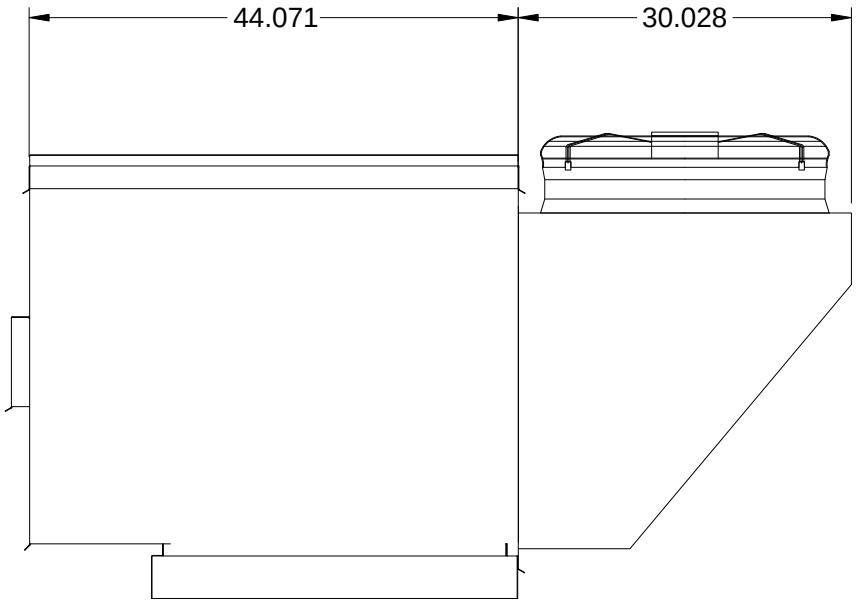
Notes - Elevation View
Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.
Order of unit sections is from intake of unit to discharge of unit.
Sections included on this unit: Weatherhood Section, Filter Section, Cooling Section, Blower Section, Furnace 1 Section
Insulation: Double Wall, from Cooling Section through end of unit.

PLAN VIEW

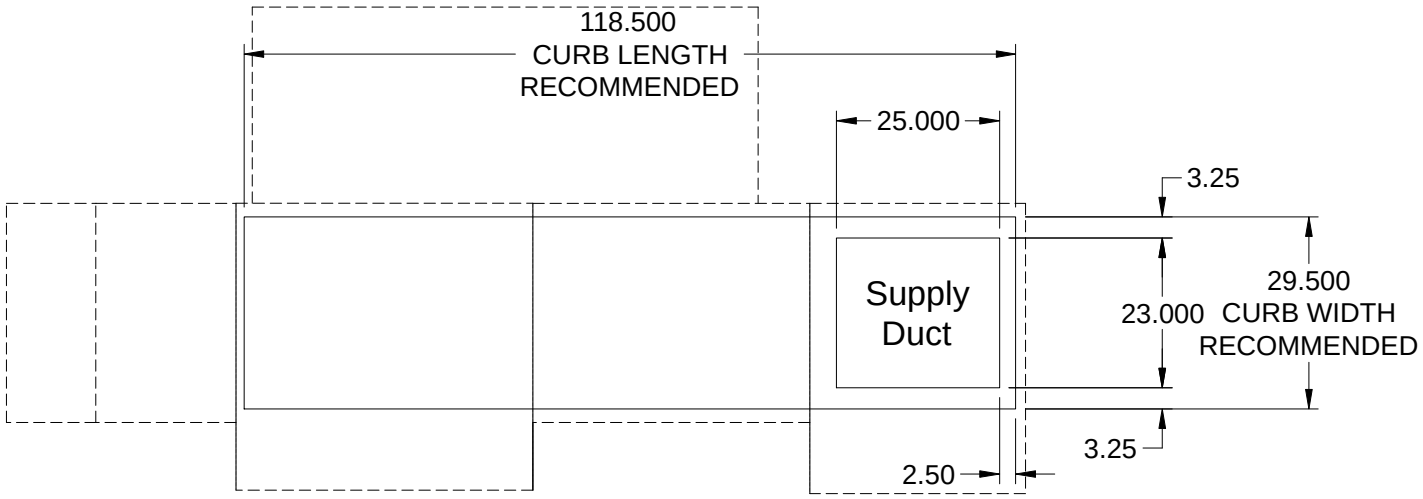


Notes - Plan View
Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

END VIEW



FOOTPRINT VIEW



Notes - Footprint View
Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.
Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb. For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.
The weatherhood and filter sections of the make-up air unit extend beyond the curb. This is by design, to prevent water infiltration.

Job Name/Location: **Tag #:**

Date:

PO No.:

For: ☐ File ☐ Resubmit ☐ Approval ☐ Other

Architect: GC:

Engr: Mech:

Rep:
(Company) (Project Manager)



ARUN024GSS4
Multi V™ S Heat Pump
2.0 Ton Outdoor Unit

LG Life's Good

Performance:

Cooling Mode:

Rated Capacity (Btu/h)	24,000
Power Input[1] (kW)	2.15

Heating Mode:

Rated Capacity (Btu/h)	27,000
Power Input[1] (kW)	2.54

Rated Capacity is based on the following conditions:

Cooling:	Heating:
Indoor: 80°F DB / 67°F WB	Indoor: 70°F DB
Outdoor: 95°F DB	Outdoor: 47°F DB / 43°F WB

Electrical:

Power Supply (V/Hz/Ø)	208-230/60/1
MOP (A)	30
MCA (A)	19.6
Rated Amps (A)	
Compressor (A)	15.3
Fan (A)	0.5

Piping:

Refrigerant Charge (lbs)	4.0
Liquid Line (in, OD)	3/8
Vapor Line (in, OD)	5/8

Standard Features:

- Night Quiet Operation
- Fault Detection and Diagnosis

2863 ROOFTOP HEAT PUMPS

Optional Accessories:

☐ Low Ambient Baffle Kit - ZLABGP04A (1)

☐ Drain Pan Heater - PQSH1200

****Installation of an optional Low Ambient Wind Baffle Kit will allow operation down to -9.9°F in cooling mode.**

Operating Range:

Cooling (˚F DB)**	23 - 122
Heating (˚F WB)	-4 - 61

Unit Data:

Refrigerant Type	R410A
Refrigerant Control	EEV
Max Number of Indoor Units[2]	4
Sound Pressure[3] dB(A)	50
Net Unit Weight (lbs)	159
Shipping Weight (lbs)	176
Communication Cable[4] (No x AWG)	2 x 18
Heat Exchanger Coating	GoldFin™

Compressor:

Type	Rotary
Quantity	1
Oil/Type	PVE/FVC68D

Fan:

Type	Axial Flow Fan
Quantity	1
Motor/Drive	Brushless Digitally Controlled/Direct
Air Flow Rate (CFM)	2,119

Notes:

1.For AHRI ratings, refer to the AHRI website http://www.ahridirectory.org.
2.The combination ratio must be between 50 – 130%.
3.Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.
4.All power/communication cable to be minimum 18 American wire gage (AWG), 4-conductor, stranded, shielded or unshielded wire and must comply with applicable local and national code. If shielded, the wire must be grounded to the chassis at the outdoor unit only.
5.Nominal data is rated 0 ft above sea level, with 25 ft of refrigerant line per indoor unit and a 0 ft level difference between outdoor and indoor units. All capacities are net with a combination ratio between 95-105%.
6.Power wiring cable size must comply with the applicable local and national codes.

7.The voltage tolerance is ± 10%.

Inverter

Intertek

AHRI CERTIFIED™ www.ahridirectory.org
Variable Refrigerant Flow (VRF) Multi-Split AC and HP
AHRI Standard 1230

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Job Name/Location:

ARUN024GSS4

Multi V™ S Heat Pump

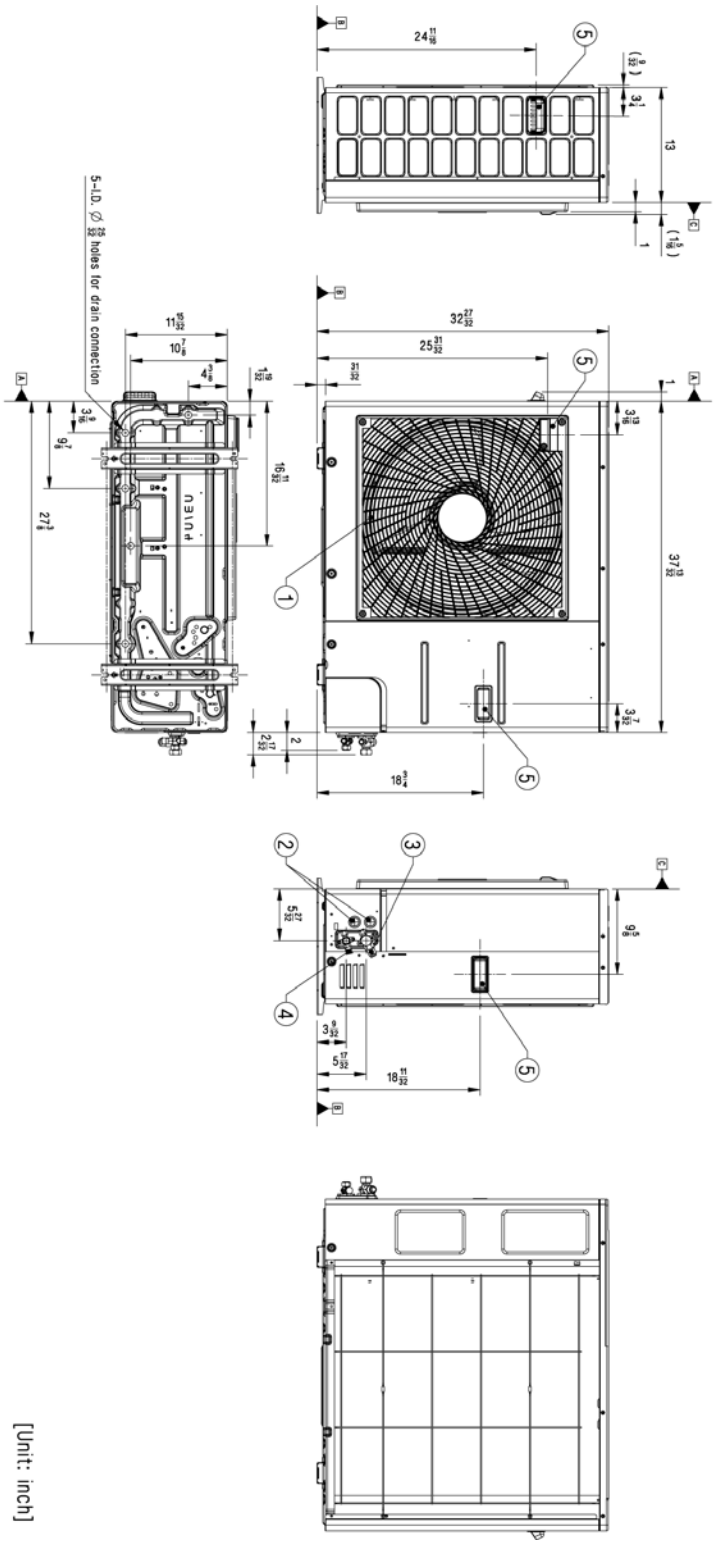
2.0 Ton Outdoor Unit

Tag #:

Date:

PO No.:

2863 ROOFTOP HEAT PUMPS



Symbols

Piping Direction

Datum line

Note

1. Unit should be installed in compliance with the installation manual in the product box.
2. Unit should be grounded in accordance with the localregulations or applicable national codes.
3. All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.
4. Electric characteristics chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

No.	Part Name	Description
1	Air Outlet	-
2	Power and communication cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-

[Unit: inch]

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THE BRICK INDUSTRY ASSOCIATION

TECHNICAL NOTES on Brick Construction

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20

August 2018

Cleaning Brickwork

Abstract: This *Technical Note* addresses cleaning of brickwork and brick pavements. Methods for removal of efflorescence and a variety of specific stains are discussed, which should result in the successful cleaning of brickwork.

Key Words: abrasive blasting, acid, bucket and brush cleaning, cleaning, efflorescence, poultice, pressurized water, stains.

SUMMARY OF RECOMMENDATIONS:

During Construction

- Store brick off the ground under protective covering
- Protect wall surfaces and unlaid brick from rain-splashed mud and mortar splatter
- Use bricklaying techniques that reduce mortar smears during construction; brush excess mortar after tooling and remove large mortar tags using wooden paddles or nonmetallic tools
- Protect any unfinished walls with waterproof cover at the end of the workday, and extend covering at least 2 ft (0.6 m) down from the top of the wall on all sides

Prior to Cleaning

- Match the cleaning method and cleaning solution to the type of brick
- Verify that the cleaning method and cleaning solution used are approved by the brick manufacturer
- Protect adjacent materials that may be damaged by the brick cleaning process
- Perform trial cleaning on a 20 sq ft (2 m²) sample area and allow wall to dry before evaluating results
- For some projects, multiple cleaning trials may be required in order to achieve acceptable results
- Control and/or treat runoff in accordance with the requirements of the jurisdiction

For All Cleaning Methods

- Follow the brick manufacturer's recommended cleaning procedure
- When manufacturer recommendations are not provided, refer to Table 1 for recommended cleaning methods for various brick categories
- Select the gentlest effective cleaning method
- Do not allow cleaning solution to dry on brickwork
- Do not use unbuffered muriatic (hydrochloric) or hydrofluoric acid
- Clean new masonry as soon as possible after mortar hardens, typically between 24 hours and seven days, depending on the cleaning method used
- Apply cleaning solution as recommended by the cleaning product manufacturer

Bucket and Brush Cleaning

- For pre-wetting, saturate the area to be cleaned and brickwork below with water prior to applying cleaning solution, and keep the entire area wet during the cleaning process
- Mix and apply cleaning solution according to cleaning product manufacturer's instructions
- Thoroughly rinse the area being cleaned and the area below with water

Pressurized Water Cleaning

- Use a stainless steel 25 to 50 deg. fan tip, held a minimum of 12 in. (305 mm) from the brick surface
- Do not use water pressures higher than 400 psi (2800 kPa) as measured at the nozzle tip unless permitted by brick manufacturer
- For pre-wetting, use very low pressure (less than 100 psi [700 kPa])
- Saturate the area to be cleaned and brickwork below prior to applying cleaning solution, and keep wet until final rinse
- Apply cleaning solution according to manufacturer's instructions by brush or a chemical pump/tank sprayer with a wide-angle fan-shaped sprayer nozzle tip, maximum 30 to 50 psi (200 to 350 kPa)
- For rinsing, use low pressure (100 to 400 psi [700 to 2800 kPa])

Other Cleaning Methods

- Poultice: Do not use as a general cleaning method; use only on persistent, localized stains
- Abrasive blasting: Except as noted in this document, do not use
- Microabrasives: Consult manufacturers of proprietary systems for suitability; these are gentler alternatives to abrasive blasting
- Lasers: Match laser type and light wavelength to stains to be removed; specialized contractors are required
- Refer to "Removing Specific Stains" for cleaning solution recommendations to clean various known stains

Efflorescence Control

- Allow one year of weathering to naturally remove new-building bloom
- Remove light efflorescence by dry-brushing or brushing with a stiff fiber brush and water
- Before attempting to clean recurring efflorescence, identify and correct the source of water penetration and allow the brickwork to dry
- Remove stubborn accumulations with a proprietary cleaning product according to the manufacturer's instructions

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INTRODUCTION

The final appearance of brickwork depends primarily on the attention given to masonry surfaces during construction and the cleaning process. Even with good practices during construction, some cleaning may be required at the end of brickwork installation. Recommended cleaning methods and materials vary based on the type of brick, mortar, construction and reason for cleaning. For example, cleaning newly constructed brickwork of an entire building requires a different approach from removing stains from an isolated portion of an existing wall.

The selection of effective cleaning solutions, as well as the use of consistent and appropriate cleaning procedures throughout the job, is essential to successful cleaning and cannot be overemphasized. Improper cleaning practices can cause a host of problems that in severe cases cannot be repaired.

This *Technical Note* does not address specific safety issues related to various methods of cleaning brick masonry. Beware that cleaning agents and processes may be hazardous and may cause injury if used carelessly or inappropriately. Cleaning operations should be performed only by personnel trained to handle the safety risks associated with the work and following the label instructions.

GENERAL

Prior to beginning masonry cleaning, there are a number of considerations common to all projects that should be addressed during the planning process.

Project Considerations

Clean Water. Water used for cleaning should be potable (suitable for drinking). Iron content should be less than 2 parts per million by weight. Determine whether the local water includes additives, water softeners or other agents that may cause issues if used for cleaning.

Cold Weather. Air temperature, temperature of masonry and wind conditions affect the drying time and reaction rate of cleaning solutions. Chemical cleaning solutions are generally more effective when the outdoor temperature is 50 °F (10 °C) or above. To avoid harming the masonry or increasing the risk of efflorescence, do not clean during freezing weather or when freezing weather is expected. It is preferred to use cleaning methods that involve water only when the ambient temperature will be 40 °F or above and will remain so until the wall is dry. Ideally, temperatures should be above freezing for seven days after cleaning is completed.

Hot Weather. Do not allow cleaning solutions to dry on brickwork. Be aware that an increased risk of rapid drying exists in high temperatures. In hot weather, the cleaning crew can reduce this risk by working on small or shaded areas and being diligent about keeping the wall saturated during cleaning solution application and rinsing.

Work Area. The size of the work area should be determined after trial cleaning or as part of the first area cleaned. The size of the work area can be modified as appropriate while the work progresses.

Work Sequencing. Cleaning should be performed systematically, proceeding consistently per the “General Cleaning Procedure” section of this document within a given work area or scaffolding tier and from one end of the elevation to the other. Perform cleaning to achieve uniform coverage of surfaces, including corners, moldings and interstices, and to produce consistent results without streaking or damaging the wall surface. Avoid overlapping work areas.

Safety. Some chemicals used to clean brickwork may be harmful, including their fumes. Protecting people and property is an essential component of any cleaning project. Use protective clothing and accessories, ensure proper ventilation, and exercise safe handling procedures in accordance with OSHA requirements. Comply with federal, state or local laws regulating the use and disposal of chemicals and cleaning runoff or wastewater. Some jurisdictions may require containment and treatment of the runoff water before it can leave the site. Dilution of runoff and its release into the stormwater management system should not be expected or allowed unless expressly permitted by the applicable jurisdiction. Strictly observe the cleaner manufacturer’s safety data sheets and recommended handling requirements. The contractor should consider preparing a formal cleaning plan describing the cleaning process, materials and procedures to ensure that these handling and protection issues are addressed.

Brick Texture. Brick texture may also influence the effectiveness of cleaning operations. Mortar stains and smears are generally easier to remove from brick with smooth textures because less surface area is exposed. Smoother brick textures include die skin extruded brick, glazed brick, water-struck molded brick and dry-pressed brick. Brick

with smoother surfaces are easier to clean because residue, acid staining, and mortar smears are more visible on their unbroken surfaces. Mortar and dirt tend to penetrate deeper into textured surfaces. Brick that are wire-cut or coated, or textured extruded brick and sand-struck molded brick, provide additional surface area for water and acid absorption. Use of pressurized water may assist in achieving complete rinsing of rough-textured brick.

Characteristics Requiring Extra Care. Both new and existing brickwork may incorporate characteristics that must be considered in the development of a cleaning plan to avoid damage during the cleaning process. These can include but are not limited to decorative coatings or finishes, water repellents, mortar type, mortar color or historic significance.

Trial Cleaning

Before cleaning, it is beneficial to test potential cleaning procedures and solutions on a sample area of about 20 sq ft (2 m^2), or large enough to evaluate the selected cleaning procedure. Although not common for small residential projects, trial cleaning on larger, more complex projects not only serves as a means to determine whether mortar or stains can be removed but also helps to identify the most effective procedures that cause the least damage to the masonry. Optimal concentrations of cleaning products and solutions to unexpected problems can also be determined through trial cleaning. Once approved, the test area can serve as a standard for the appearance of the brickwork after cleaning.

Reactions between cleaning solutions and certain minerals found in some brick or their surface coatings may cause stains or worsen existing stains. It is always best to test a small area before subjecting the entire project to the cleaning procedure. Ideally, a portion of the sample panel can be tested, leaving the building and the rest of the sample panel undamaged in case the brickwork is adversely affected. Trial cleaning should be performed on an inconspicuous location on the building and conducted at temperature and humidity conditions that will closely approximate the conditions that will be experienced during cleaning of the remainder of the building.

Judge the effectiveness of a cleaning agent or procedure by inspecting both brick and mortar in the trial area after it has dried sufficiently, usually in about one week. Approval of the cleaned brickwork in cleaning area should precede application of the cleaning agent to the remainder of the building.

CLEANING NEW BRICKWORK

With new construction, keeping the masonry clean as it is erected can be very cost-effective, as it can eliminate the need for extensive cleaning after construction. Brickwork should be cleaned soon after construction is completed to remove mortar smears and construction dirt that detract from the appearance of the masonry. When it is determined that brickwork needs to be cleaned, the manufacturer's identification card on the brick cube and other pertinent manufacturer information should be consulted first to ascertain the recommended cleaning products and procedures for the brick. As discussed in the "Select Cleaning Method by Brick Category" section, recommended cleaning materials and methods vary with the type of brick.

Keeping Brickwork Clean During Construction

When constructing new brick masonry, it is important to use construction practices that will minimize the amount of cleaning required. The following are some general practices that can be used to construct a cleaner wall:

- Protect site-stored brick from mud. Store brick off the ground and under a waterproof covering.
- Erect scaffolding far enough away from the wall to allow mortar droppings to fall to the ground. Scaffold boards closest to the wall should be angled away from the wall or removed at the end of the day to remove excess mortar droppings and to prevent rain from splashing mortar and dirt directly onto the completed masonry.
- Protect the base of the wall from rain-splashed mud and mortar splatter. Use straw, sand, sawdust, plastic sheeting or fabric spread out on the ground, extending 3 to 4 ft (0.9 to 1.2 m) from the wall surface and 2 to 3 ft (0.6 to 0.9 m) up the wall. Keep this protection in place until final landscaping.
- Cover wall openings and tops of walls with a waterproof membrane at the end of the workday and during other work stoppages to prevent mortar joint washout and entry of water into the completed masonry. Extend covering a minimum of 2 ft (0.6 m) down each side of the wall.
- Protect newly constructed brickwork from adjacent construction practices that may cause staining, such as placing concrete or spraying curing agent.

It is always advisable to keep brickwork as free from mortar smears as possible. Masons should also be careful to prevent excessive mortar droppings from contacting the face of the wall or falling into the air space. In addition to the bricklaying techniques described in *Technical Note* 7B, the following practices should be followed:

- After spreading mortar, but before laying brick, the trowel edge should be used to cut mortar even with the wall face, preventing excessive extrusion of mortar onto the face of the wall as the brick are laid.
- After tooling joints, excess mortar and dust should be brushed from the wall surface, preferably using a medium-soft bristle or fiber brush. Brushes with steel bristles are not recommended, as they may leave behind small particles that can rust. Brushing is preferable to bagging or sacking—the practice of rubbing a damp burlap material across the face of the masonry. Avoid any motion that will result in rubbing or pressing mortar into the brick faces.
- Large clumps of mortar that adhere to brickwork should be allowed to dry and become firm before removing by hand with wooden paddles or nonmetallic tools.

Select Cleaning Method by Brick Category

Generally, the cleaning method that effectively cleans the brickwork while being the gentlest, or least harmful to the masonry, is the most appropriate. Try cleaning masonry by hand with a bucket and brush or pressurized water before using chemical cleaners.

Always consult brick manufacturers for recommendations on cleaning specific brick. This information is usually on the identification card located on the brick cube, in the product data literature or on the manufacturer's website. In some cases, the manufacturer's recommendations will permit the contractor to proceed to a specific cleaning product and method. When more than one type or color of brick is used, the brick manufacturer can aid in identifying a cleaning method that will be safe for all the brickwork. Table 1 recommends appropriate cleaning methods for various brick types when guidelines are not available from the brick manufacturer. These are general recommendations and may not be effective on all brick described in each category. As noted in Table 1, the use of colored mortars may require special consideration.

Multiple methods may be required on the same wall to achieve an adequate level of cleaning. Once the method(s) of cleaning are selected, refer to the section "General Cleaning Procedure."

TABLE 1
Quick Guide for Cleaning Brickwork

Brick Category	Cleaning Method	Remarks
Red and Red Flashed	• Bucket and brush hand-cleaning • Pressurized water	Clean with water, detergents, emulsifying agents or suitable proprietary compounds. Do not clean with unbuffered muriatic (hydrochloric) acid solutions. Abrasive blasting is not recommended for heavy sand finishes.
White, Tan, Buff, Gray, Pink, Brown, Black, Specks and Spots	• Bucket and brush hand-cleaning • Pressurized water	Clean with water, detergents, emulsifying agents or suitable proprietary compounds. Do not use unbuffered muriatic (hydrochloric) acid solutions. Light-colored brick are more susceptible to "acid burn" and stains compared with darker units. Abrasive blasting is not recommended for heavy sand finishes.
Sand Finish or Surface Coating	• Bucket and brush hand-cleaning	Clean with water and scrub brush using light pressure. Stubborn mortar stains may require use of cleaning solutions. Use of pressurized water or abrasive blasting is not recommended. Cleaning may affect appearance. See "Brick Category" for additional remarks based on brick color.
Glazed Brick	• Bucket and brush hand-cleaning • Pressurized water	Wipe glazed surface with soft cloth within a few minutes of laying units. Use a soft sponge or brush plus ample water for final washing. Use detergents where necessary and proprietary cleaners only for very difficult mortar stains. Consult brick and cleaner manufacturer before using proprietary cleaners on salt glazed or metallic glazed brick. Do not use abrasive powders. Do not use metal cleaning tools or brushes.
Colored Mortars	• Method is generally controlled by brick category	Many manufacturers of colored mortars do not recommend chemical cleaning solutions. Unbuffered acids and some proprietary cleaners tend to bleach colored mortars. Mild detergent solutions are generally recommended. Evaluate effects as part of cleaning trials.

Bucket and Brush Hand Cleaning. This is a popular but misunderstood method used to clean brick masonry. Its popularity is due to the simplicity of execution and the availability of proprietary cleaning compounds. This cleaning method is the least aggressive of the methods listed here and is applicable to virtually all brick types. Hot water (temperature of 120 °F [49 °C]) can be used to improve effectiveness of cleaning with water. If a chemical cleaning solution is used, then it should be compatible with the brick.

Pressurized Water Cleaning. The brick manufacturer should be consulted before use of pressurized water to clean brick. Cleaning contractors often use pressurized water because it is less labor intensive than bucket and brush cleaning and permits large areas to be cleaned much more quickly. Pressurized water cleaning permits the operator to spray clean water on a wall over 100 ft (30 m) from the tank and compressor. However, the method requires more skill than the bucket and brush method, because effective results depend on maintaining a consistent, appropriate pressure, water flow rate, distance from the wall, and angle between the nozzle and the wall. It is also important to use uniform horizontal strokes. The effects of pressurized water cleaning on each project or type of brick should be carefully considered, because excessive pressure may damage brick surfaces, erode mortar joints, and remove finishes or other surface coatings, resulting in a different appearance. The following definitions apply for pressurized water cleaning:

- Very low pressure: Less than 100 psi (700 kPa); 4 to 6 gal per minute (15 to 23 L per minute).
- Low pressure: 100 to 400 psi (700 to 2800 kPa); 4 to 6 gal per minute (15 to 23 L per minute).
- Medium pressure: 400 to 800 psi (2800 to 5600 kPa); 4 to 6 gal per minute (15 to 23 L per minute). Medium pressure water cleaning may be appropriate in some cases, with certain types of brick. Use only if permitted by the brick manufacturer.
- High pressure: Greater than 800 psi (5600 kPa). High-pressure water cleaning is not appropriate for brick and may damage the brickwork.

Pressures should be measured at the tip of the nozzle to determine conformance. Use a 25 to 50 deg. fan-shaped stainless steel nozzle tip, and maintain a distance of 12 in. (305 mm) minimum between the nozzle tip and the brick surface.

Hot water can also be used in pressurized water cleaning. However, note that some pressure-washing equipment may not be capable of providing or using hot water.

General Cleaning Procedure

The following general cleaning procedure is applicable to a variety of cleaning methods and is commonly used for new brickwork, as well as for existing masonry.

1. **Timing.** Identify the appropriate time frame to begin cleaning. Mortar must be hardened prior to cleaning. It is generally best to schedule cleaning at least seven days after brickwork is completed. In some cases, it may be possible to clean earlier; however, effects on the masonry and influencing factors such as weather conditions and the type of brick and mortar should be carefully considered. If cleaning with water only (no chemicals added), cleaning may begin 24 to 36 hours after completion of brickwork. Avoid waiting too long between the completion of the masonry and cleaning. After one month, mortar smears and splatters left on brickwork become increasingly difficult to remove.

2. **Remove Mortar Clumps.** Remove larger clumps of mortar using wooden paddles or nonmetallic tools. Metal tools may damage the brickwork or leave behind fragments that oxidize and cause rust stains. Remove smaller particles using a fiber bristle brush.

3. **Select Cleaning Solution.** Select the proper cleaning solution for the condition/application. There are many types of proprietary cleaners available that are formulated to remove specific stains or are for use with a particular type of brick. Be careful to select cleaning products suitable for the brick, mortar and adjacent materials. Strictly follow the cleaner manufacturer's recommended instructions, including recommendations for cleaning procedure direction (top-down or bottom-up) during all stages of the project, such as saturating the wall, applying the cleaning solution and rinsing. Verify compatibility of the cleaning solution with the application equipment to be used. The cleaning solution should be approved by the architect/engineer and/or brick manufacturer. Each product being considered should be evaluated as discussed in "Trial Cleaning." It is recommended to evaluate the effectiveness of

cleaning solutions for overall cleaning, starting from the gentlest solution and method, in the following order:

a. Water only
b. Mild detergents/surfactants
c. One-step chemical cleaners
d. Two-step chemical cleaners

Treatment of specific stains does not necessarily need to follow this order of cleaning solution application, but the overall premise of starting with gentler cleaning methods still applies. If overall cleaning will be performed on the project, then complete it prior to treatment of the specific stains. The overall cleaning may reduce the intensity or area of the specific stain, allowing the stronger chemicals to be used on a smaller area.

Do not use unbuffered muriatic (hydrochloric) or hydrofluoric acid. Use of unbuffered high-strength acid solutions such as these tends to cause further stains and damage mortar joints. Many proprietary cleaners contain acids; however, their formulations include other chemicals that make them safer, easier to use properly and more environmentally responsible. Be aware that some cleaning solutions use compounds that will convert to these acids when combined with water. Review product safety data sheets to determine whether these compounds are present.

4. **Protect Surroundings.** Protect adjacent materials and nearby plants. Mask or otherwise protect windows; doors; and materials such as sealants, metal, glass, wood, limestone, cast stone, concrete masonry and ornamental trim from cleaning solutions. Cleaning chemicals may also damage plants and grass. It may be necessary to prevent the cleaning solution and runoff from contacting plants or the surrounding soil. Use protective clothing, equipment and accessories, in addition to proper ventilation and safe handling procedures in accordance with OSHA requirements to protect applicators.

5. **Saturate with Water.** Thoroughly saturate the area to be cleaned with water to keep it from absorbing the cleaning solution or dissolved mortar particles to a depth where they will be difficult to remove. When using pressurized water, a very low pressure (no more than 100 psi [700 kPa]) is recommended. Surfaces below the area being cleaned should also be saturated and kept wet until after the final rinse to prevent streaking and absorption of the runoff from above. If the wall surface appears to be drying, then reapply water until ready to apply the cleaning solution. Cleaning solutions containing dissolved mortar particles can be drawn into dry masonry and cause staining.

6. **Apply Cleaning Solution.** Mix and apply the cleaning solution in strict accordance with the cleaner manufacturer's instructions. Clean 20 sq ft (2 m^2) of wall area at a time. The solution may be applied using a masonry cleaning brush or chemical pump/tank sprayer. Brushes should be long handled with stiff bristle fibers. Do not use metal brushes, which may damage mortar joints or result in further staining. If spraying, use a wide-angle fan-shaped sprayer nozzle tip and a pressure of 30 to 50 psi (200 to 350 kPa). No more than 50 psi (350 kPa) of pressure should be used, because higher pressure can force the cleaning solution deep into the masonry to become a source of future staining. For proprietary compounds, follow the cleaner manufacturer's instructions for application, dwell time and cleaning technique. Depend on the chemical reaction of the cleaner rather than the scrubbing action of the brush or pressure of the sprayer. If stubborn mortar smears are not removed, reapplication is often more effective than harder scrubbing or applying more pressure.

7. **Rinse Thoroughly with Water.** Flush walls with large amounts of clean water, in strict accordance with the cleaner manufacturer's instructions, before cleaned surfaces can dry (approximately 5 to 10 minutes after application). For pressurized water cleaning, low pressure (less than 400 psi [2800 kPa]) is recommended to flush the cleaning solution from the brickwork. If trial cleaning or prior experience with the selected brick has established that no damage will result, then higher pressures may be used. No matter what method is used, a thorough and uniform rinse is critical. Failure to completely flush the wall of cleaning solution and dissolved matter may result in the formation of "white scum." During rinsing, monitor the appearance of the runoff. Clear runoff at the base of the wall indicates adequate rinsing. In addition, the pH of the wall surface and the water runoff should

be checked periodically with pH paper to confirm that both are returned to neutral (pH 6.5 to 7.5). Additional rinsing is needed if the pH is outside these values in either direction (too acidic or too basic). Measure the pH of the wall surface again 48 hours after cleaning has been completed, when the wall is dry. If the pH is not neutral, then rinse the surface until neutral pH is achieved.

Improper Cleaning

Cleaning failures generally result from one of the following actions:

- **Failure to thoroughly saturate the brick masonry surface with water before and after application of chemical or detergent cleaning solutions.** Dry masonry permits absorption of the cleaning solution and may result in white scum, efflorescence, manganese or vanadium stains. Saturating the surface prior to cleaning reduces the masonry's absorption rate, permitting the cleaning solution to stay on the surface of the brickwork rather than being absorbed. Likewise, thorough rinsing reduces the potential for stains caused by cleaning solution residue.
- **Use of improper chemical cleaning solutions.** Improperly mixed or overly concentrated acid solutions can etch the brick or dissolve cementitious materials from mortar joints. Unbuffered acid tends to discolor masonry units, particularly lighter shades, producing an appearance frequently termed "acid burn," and can also promote the development of vanadium and manganese stains.
- **Excessively aggressive cleaning methods.** Cleaning methods such as abrasive blasting and high-pressure water cleaning, which remove stains from the masonry by abrasion, can etch mortar joints and remove the outer surface of brick, resulting in permanent damage.
- **Failure to protect windows, doors and trim.** Many cleaning agents, particularly acid solutions, have a corrosive effect on metal. If permitted to come in contact with metal frames, the solutions may cause pitting of the metal or staining of the masonry surface and trim materials such as limestone, concrete masonry and cast stone.

CLEANING EXISTING MASONRY

During periodic inspections of existing masonry structures, areas of discoloration or stains should be identified and addressed as a part of routine maintenance. When maintenance cleaning is deferred, pollution and atmospheric conditions can cause stains, dirt and soil to accumulate on masonry surfaces. Accumulated stains will likely require stronger cleaning products and methods to remove them, which can result in increased risk of damage to the masonry.

It is always advisable to collect as much information as possible before attempting to clean existing masonry. In some cases, water repellents may have been applied to the masonry, or there may be other unexpected treatments or conditions that interfere with cleaning. In these instances, professional guidance should be sought in determining how to address these conditions to achieve successful cleaning.

Large-scale cleaning of existing masonry typically occurs as part of a maintenance or repair project. If repairs will be performed, sequencing is important. Consider the intensity of the soiling and other work to be performed to accurately assess needed repairs and to avoid introducing excess water into the wall assembly. Refer to *Technical Note* 46 for more information on repairs and maintenance.

Bucket and brush hand cleaning and pressurized water cleaning, discussed in "Select Cleaning Method by Brick Category," are also used to remove general stains from existing masonry. Besides these, other techniques used to remove dirt or specific stains from existing masonry [Ref. 3] are described briefly in this section.

Using a Poultice

A poultice is a paste made with a solvent or reagent and an inert material. It works by dissolving a stain and absorbing or pulling it into the poultice. Poultices are normally effective for deep, localized stains affecting small areas of brickwork. They are not intended for overall cleaning. Poultices tend to prevent stains from spreading during treatment and to pull stains out of the pores of brick.

Poultices for cleaning masonry can be purchased commercially or made on-site. The inert material used in the poultice may be talc, whiting, fuller's earth, diatomaceous earth, bentonite or other clay. Any chemical cleaner can be turned into a poultice. The solution or solvent used depends upon the nature of the stain to be removed. Enough of the solution or solvent is added to a small quantity of the inert material to make a smooth paste. The

paste is smeared onto the stained area with a trowel or spatula to make a coating at least ⅛ in. (3 mm) thick. The paste is covered with plastic for 24 hours, the plastic is removed, and then the paste is allowed to dry. When dried, the remaining powder, which now contains the staining material, is scraped, brushed or washed off. Repeated applications may be necessary.

If the solvent used in preparing a poultice is an acid, then do not use whiting as the inert material. Whiting is a carbonate that reacts with acids to give off carbon dioxide. While this is not dangerous, the whiting will become extremely foamy and destroy the power of the acid.

There are also proprietary poultice-like cleaning materials that cure to the consistency of a film and can be pulled from the surface in sheets instead of removing dried paste. These are marketed for cleaning interior surfaces because they do not require the use of water but are also appropriate for exterior applications. The formulation of these materials allows for use over much larger areas than typical poultices.

Abrasive Blasting

Nearly all abrasive blasting procedures, by their nature, will result in silica exposure, potentially from both the blast media and the material removed from the brickwork. The dust created can be harmful if inhaled, which poses health and safety concerns. Respirators should be used in combination with other personal protective equipment during any cleaning involving abrasive blasting methods.

Abrasive methods are not generally recommended for cleaning brickwork. Attempting to remove dirt or stains by abrasion is risky because the outer surface of the masonry may also be removed, resulting in permanent damage and increased water penetration. Abrasive cleaning may erode mortar joints and may also roughen the surface of the masonry, which increases its tendency to hold dirt, becoming dirtier faster and making future cleaning more difficult. Sanded, coated, glazed and slurry-finished brick should not be cleaned by abrasive blasting. This topic is discussed in more detail in “Dangers of Abrasive Cleaning to Historic Buildings” [Ref. 4], which can also be applicable to some newer brick.

In some cases, it may be possible to safely clean brick masonry by abrasive blasting; however, this typically requires a gentle abrasive and a highly qualified operator, in conjunction with proper specifications and job inspection. In a few instances, abrasive blasting is the only method that will remove persistent stains. This method is sometimes preferred over conventional wet cleaning, since it eliminates the problem of chemical reactions with vanadium salts and other materials used in manufacturing brick. Abrasive blasting involves an air compressor, blasting tank, blasting hose and nozzle, as well as protective clothing, a hood and a respirator for the operator. The air compressor should be capable of producing 60 to 100 psi (400 to 700 kPa) at a minimum air flow capacity of 125 ft^3 (3.5 m^3) per minute. The inside orifice or bore of the nozzle may vary from $\frac{3}{16}$ to $\frac{5}{16}$ in. (4.8 to 7.9 mm) in diameter. The sandblast machine (tank) should be equipped with controls to regulate the flow of abrasive materials to the nozzle at a minimum rate of 300 lb per hour (136 kg per hour).

Methods for cleaning masonry using abrasives may be executed at high or low pressures and with dry abrasives or abrasives added to a stream of water. Abrasives should be selected based on the degree of cutting or cleaning desired and the amount of change in the surface of the masonry permissible. Silica sands, crushed quartz, crushed granite and white urn sand (round particles) are among the harder abrasives at approximately 6 on the Mohs scale. Softer abrasives include crushed nut shells, dry ice and baking soda. If used, these materials should have a gradation appropriate for the intended use [Ref. 2].

Dry abrasive blasting (sandblasting) at high pressure is perhaps the best known of these methods but has a significant potential to damage masonry. Wet sand cleaning depends on water-cushioned abrasive action for its effectiveness. It is similar to sandblasting, with the addition of water into the air stream, which eliminates dust. It is often suggested when abrasion of the surface is permissible. Such instances may include removal of paint or other surface coatings.

Wet aggregates delivered at low pressure through a special nozzle are sometimes used on soft brick and soft stone materials, and are particularly effective on surfaces with flutings, carvings and other ornamentation. Wet aggregate cleaning is a gentle but thorough process, employing a mixture of water and a friable aggregate free from silica, with a scouring action that cleans effectively with less surface damage than sandblasting or wet sand cleaning.

The steps listed in “General Cleaning Procedure” can also be followed for abrasive blasting with the following modifications:

- In step 3, instead of selecting a cleaning solution, select abrasives that are clean, dust-free and sufficiently hard. Test-clean several areas at varying distances from the wall and at several angles that afford the best cleaning job without damaging brick and mortar joints. Workers should be instructed to direct abrasive at the brick and not directly at the mortar joints.
- Omit steps 5 through 7.

Other Methods

Microabrasives. Microabrasive cleaning methods may be better suited to use on masonry than traditional abrasive methods, as they are gentler and less likely to damage substrates. These methods differ from the traditional methods due to the media used and the lower pressures involved. They often include collection and encapsulation of the media after application, resulting in less cleanup. These systems are currently proprietary but have been in use in the United States and Europe since the 1980s.

Lasers. In recent years, laser technology has progressed such that handheld units are available and feasible for use on building exteriors. Stain removal occurs by vaporization and/or by breaking the chemical bond of the stain to the substrate. Specialized contractors are required for laser use, and not all laser types are effective on all stains due to incompatibility of the stain color with the laser wavelength. It is expected that laser technology for cleaning brickwork will continue to improve.

REMOVING EFFLORESCENCE

The removal of efflorescing salts is relatively easy compared with some other stains. Efflorescing salts are water soluble and generally will disappear of their own accord with normal weathering. This is particularly true of “new-building bloom,” which tends to occur during construction or shortly after construction is completed due to normal water loss during post-construction drying.

Before efflorescence is removed, any sources of moisture ingress should be repaired and the brickwork allowed to dry. White efflorescence can often be removed by dry-brushing or brushing with a stiff fiber brush and water. Heavy accumulations or stubborn deposits of white efflorescence may be removed with a proprietary cleaner. It is imperative that the manufacturer’s instructions be carefully followed. Refer to *Technical Note* 23A for a more detailed discussion on removing and preventing efflorescence.

REMOVING SPECIFIC STAINS

Whether a stain results from chemical reactions within a brick or external materials being spilled, splattered on or absorbed by brickwork, each is an individual case and must be treated accordingly. When using any cleaner, it is advisable to consult the brick manufacturer for cleaning advice, to follow the instructions of the cleaner manufacturer, and to trial clean in an inconspicuous area before using a cleaning method on an entire project.

There are a variety of proprietary cleaners that effectively remove most of the common substances that stain brickwork, including bronze and copper stains, efflorescence, graffiti, iron stains (rust), lime run, manganese stain, moss, oil and tar stains, paint, smoke and vanadium stain. When available, these are preferred over site-mixed or “homemade” cleaning solutions because they are generally safer, easier to control and more consistent, resulting in successful cleaning. In some cases, these cleaners have been developed in conjunction with brick manufacturers.

In addition to proprietary cleaners, many stains can be removed by scrubbing with kitchen cleansers, bleach or other household chemicals. A combination, such as is found in some kitchen cleansers, may prove most effective. The sections below list some nonproprietary alternatives for removal of common stains. Further information on causes and prevention of stains is contained in the *Technical Note* 23 Series.

Brick Dust

Dust produced from the cutting of brick sometimes adheres to the surface of brickwork. A soft fiber brush is recommended to remove dust particles from the brick surface. Wire brushes should not be used to remove dust because they can damage the brick surface. When removing dust, it is important to wear a dust mask or respirator

to ensure that dust particles are not inhaled. Afterward, the surface should be wiped down using a dust mop or a damp cloth. Use of compressed air to clean dust is not recommended due to the increased risk of particle inhalation.

Dirt and Mud

Dirt and mud stains can be difficult to remove, particularly from textured brick. In addition to proprietary cleaners, scouring powder and a stiff bristle brush are effective if the texture is not too rough. For very rough textures, pressurized water cleaning can be effective.

Egg Splatter

Brickwork vandalized with raw eggs has been successfully cleaned by pre-wetting the stain, applying a saturated solution of oxalic acid crystals dissolved in water, and rinsing with water. Mix the solution in a nonmetallic container and apply with a brush.

If the egg splatter is to be removed from brick that contain vanadium (typically light-colored units), then a solution of 15 oz washing soda (sodium carbonate) per 1 gal of water (113.5 g per 1 L) should be applied to the brickwork following the oxalic acid solution. Without this neutralizing solution, cleaning with oxalic acid may cause more severe staining.

Manganese (Brown) Stain

Besides specially formulated proprietary compounds, an alternate treatment sometimes suggested for new and mild manganese stains is oxalic acid crystals and water. Mix 1 lb of crystals per 1 gal of water (119 g per 1 L). The neutralizing wash mentioned in the “Egg Splatter” section should be considered when oxalic acid is applied to brown or light-colored brick. Another recommended effective treatment for manganese stains is a solution of equal parts white vinegar, hydrogen peroxide (3 percent solution) and distilled water.

Oil and Tar Stains

Oil and tar stains may be effectively removed with commercially available oil and tar removers. For heavy tar stains, mix the agents with kerosene to remove the tar, and then rinse with water to remove the kerosene. After application, the stains can be hosed off. When used in a steam-cleaning apparatus, cleaners have been known to remove tar without the use of kerosene.

Where the area to be cleaned is small, or where minimal cleanup is desired, a poultice using naphtha or trichloroethylene is most effective in removing oil stains.

Dry ice or compressed carbon dioxide may be applied to make tar brittle. Then light tapping with a small hammer and prying with a putty knife generally will be adequate to remove thick tar splatters.

Organic Growth

Occasionally, an exterior masonry surface remains in a constantly damp condition, thus encouraging moss, algae, lichen, or other microbial or organic growth. Manufacturers of masonry cleaning products offer biocides targeted to remove organic and microbial growth on masonry surfaces. Applications of household bleach, ammonium sulfate or weed killer, in accordance with furnished directions, can also successfully remove organic material in some cases.

Paint, Coatings and Graffiti

Commercial and proprietary paint removers and organic solvents are most effective at softening or dissolving paint so that it can be removed with a scraper and a stiff bristle brush or rinsed away with water. Specialized cleaning systems designed for encapsulation and peeling of applied coatings are also effective. For very old dried paint, organic solvents may not be effective, in which case the paint may be removed by abrasive blasting or scrubbing with a nonmetallic abrasive pad. Try removing paint and coatings using nonabrasive methods first before proceeding to abrasive methods. Note that methods involving scraping and abrasive blasting are not recommended when there is a risk that lead paint is present unless abatement protection procedures are

included, as the lead paint particles can be dispersed into the air. Graffiti that has penetrated into masonry is best removed by a poultice, paste or gel that can cling to the masonry, extending its working time on the stain.

Smoke

Scrubbing with scouring powder (particularly one containing bleach) and a stiff bristle brush is often effective.

Vanadium (Green) Stain

Applying a solution of either potassium hydroxide or sodium hydroxide, consisting of 0.5 lb hydroxide per 1 qt of water (240 g per 1 L) to brickwork is an alternative treatment for vanadium stains. The solution should be allowed to remain on the brickwork for two or three days and then washed off. Use a hose to remove any white residue remaining on the brickwork after this treatment.

Sodium hypochlorite, the active ingredient in household bleaches, can also be used to remove mild vanadium stains. Spray or brush onto the stain, and then rinse off after the stain disappears.

Oxalic acid is another chemical known to remove vanadium stains. A mixture of 3 to 6 oz oxalic acid per 1 gal of water, preferably warm, (22.4 to 44.8 g per 1 L) should be applied to the brickwork, followed by the neutralizing wash described in the “Egg Splatter” section. More severe staining may result if the oxalic acid solution is applied without the neutralizing wash.

Welding Splatter

When metal is welded too close to brick stored on-site or completed brickwork, molten metal may splash onto the brick and melt into the surface. A mixture of 1 lb oxalic crystals and 0.5 lb of ammonium bifluoride per 1 gal of water (119 g and 61 g per 1 L) is particularly effective in removing welding splatters. This mixture should be used with caution, as it generates dangerous hydrofluoric acid, which can also etch brick and glass.

Scrape as much of the metal as possible from the brick. Apply the mixture in a poultice and remove when it is dried. If the stain has not disappeared, use sandpaper to remove as much as possible and then apply a fresh poultice. For stubborn stains, several applications may be necessary.

Stains of Unknown Origin

Stains of unknown origin can be a real challenge. Applying a cleaning agent without identifying the initial stain may result in additional stains that are more difficult to remove. The visual characteristics of a stain may be the first clues as to its source. Identification of stains is discussed further in *Technical Note* 23.

To determine the composition of an unknown stain, samples of the stain should be extracted from the wall and sent to a testing laboratory. Then the appropriate method may be implemented to clean the brickwork.

CLEANING HISTORIC STRUCTURES

Improper cleaning can cause irreparable damage to historic brickwork. Therefore, cleaning of structures with historic significance should be overseen by a restoration specialist. Such a specialist will be able to identify previous treatments, determine appropriate cleaners and cleaning methods, and provide quality assurance for the project.

Before a historic structure is cleaned, consider the purpose of cleaning: to improve the appearance, to slow deterioration, or to provide a clean surface for evaluation or further treatments. With historic structures, it is imperative to use the least harmful cleaning method that will achieve the desired results. Cleaning methods and materials must be carefully matched to the substrate to be cleaned, the type of soiling/staining to be removed and the desired results. It is recommended to use cleaning trials to evaluate the effectiveness of various cleaning products and methods. It is also recommended to determine the level of cleanliness appropriate for the historic brickwork and structure. These issues are discussed in detail in the National Park Service Preservation Brief “Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings” [Ref. 5].

CLEANING BRICK PAVING

Some of the methods already described for cleaning brick walls, such as pressurized water cleaning or using a bucket and brush, can be used successfully to remove stains that also affect pavements such as efflorescence, hardened mortar, plant life, oil and tar, etc. However, acid-based cleaning solutions may not be appropriate for pavements containing joint sand stabilizers or polymeric sand–filled joints. Prior to selecting a cleaning solution for brick pavements, it is recommended to verify the compatibility of the cleaner with the paver manufacturer. Most paver manufacturers will provide literature on recommended cleaning procedures.

Most paving systems can be kept clean in most environments by regular sweeping. In situations that lead to a greater degree of grease buildup, stains from deicing salts, materials tracked or spilled onto the pavement, tire marks or other stains, frequent sweeping or pressurized water cleaning at low pressure will help reduce the need for more aggressive cleaning methods and solutions. Low-pressure water cleaning can be more effective when hot water is used and when mild detergents are applied to the pavement surface.

Fresh mortar stains can be removed from existing or mortarless pavements before they set by covering the pavement with clean, slightly damp, washed sand and sweeping toward the edges. When the surface is almost clean, sweeping with dry sand should remove the remaining residue.

More stubborn stains, including food and paint, can be cleaned by scraping off the hard residue and then scrubbing with a stiff bristle brush and scouring powder. Chewing gum can usually be removed from brick pavements with nonmetallic tools, carefully applied medium-pressure water or freezing each piece of gum with compressed carbon dioxide or dry ice, and then scraping or chiseling it off the pavement. Food stains and tire marks are typically removed by scrubbing with a detergent or a proprietary cleaner. In damp or shady areas where moss and lichens have grown in the joints, these can be killed using bleach and water mixed in a ratio of one to one or proprietary biocide treatments.

Stains from polymeric sand can occur on paver surface adjacent to joints. To prevent this during construction, it is critical to remove all sand or dust from the surface before and after activation. Leaf blowers on the lowest setting held at a low angle can help redirect remaining sand and water into the joints. Using a shop vacuum can also be effective in removing sand or dust from the paver surface. If the sand is not removed after activation and haze stains appear on the paver surface, it is recommended to use a nonmetallic bristle brush with hot water (approximately 180 °F or 82 °C) or vinegar to remove the haze. Proprietary cleaning products formulated for haze removal are also available. Be aware that typical cleaning products formulated for masonry may react adversely with the polymer in the sand and should not be used to clean the haze. In addition, many cleaning products marketed by polymer sand manufacturers consist of unbuffered hydrochloric (muriatic) acid and should not be used on clay pavers.

Cleaning solutions, polymeric sands or other products applied directly to clay pavers should always be tested on a small, inconspicuous area before application to the entire project. Some of these products have been known to haze, stain or discolor certain pavers. Stabilized sand-filled joints are generally resistant to pressure washing if the nozzles are kept clear of the surface and the water jet is not aimed directly along the joints. Aggressive pressure washing can cause localized removal of joint sand.

SUMMARY

Testing of cleaning procedures and chemicals as suggested in this *Technical Note* is strongly recommended. Such testing should be performed under conditions of temperature and humidity that closely approximate the conditions under which the brick masonry will be cleaned. Cleaning solutions and methods recommended by the brick or cleaning agent manufacturer should also be trial tested over a small area before being committed to an entire project. To minimize the risk of damaging the brickwork, begin by selecting the gentlest cleaning methods and materials appropriate for the situation. The effects of any cleaning process on the brickwork, people and the environment should be carefully evaluated before any cleaning begins.

The recommendations in this *Technical Note* should be used as a guide for successful cleaning of brick masonry. Due to the diverse nature of cleaning solutions, procedures and problems, the Brick Industry Association cannot accept responsibility for the final success or effectiveness of these procedures.

Nothing is quite as effective as careful attention exercised during construction to keep brickwork relatively clean. If this is successful, then it will eliminate the need for costly cleaning procedures.

> *The information and suggestions contained in this* Technical Note *are based on the available data and the combined experience of engineering staff and members of the Brick Industry Association. The information contained herein must be used in conjunction with good technical judgment and a basic understanding of the properties of brick masonry. Final decisions on the use of the information contained in this* Technical Note *are not within the purview of the Brick Industry Association and must rest with the project architect, engineer and owner.*

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